

PHILOSOPHICAL,

L I T E R A R Y,

A N D

HISTORICAL PIECES,

V I Z.

Elements of the Newtonian Philosophy

Letter concerning Roger Bacon

The Dream of Plato

Dissertation on the Changes which have happened on our Globe

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Dialogues

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Of three Kinds of Government, and a Thousand ancient Errors

That Modern Europe is superior to ancient Europe

Of the Slavery of the Mind

On Religion

Of the Right of War

That every State ought to be independent

On Curious Subjects

Life of Moliere, &c.

Translated from the last Edition of M. DE VOLTAIRE.

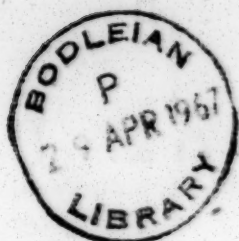
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A N

HISTORICAL PANEGYRIC

O N T H E

MARCHIONESS DU CHATELET, 1754.

TO the astonishment and to the glory of her country, a lady has attempted and perfected a translation * which ought to have been the work of the most learned men in France, and which all ought to study. Gabrielle Emillie de Breteuil, spouse to the marquis du Châtelet-Lomont, lieutenant-general in the royal army, is the author of this translation, which is become necessary to all those who wish to acquire those profound branches of science, for the discovery of which the world is indebted to the great Newton.

It would have been matter of admiration for one of her sex to be acquainted with the common geometry, which is not even an introduction to the sublime truths which are taught in that immortal work; but it is evident that Madame du Châtelet is far advanced in the path that Newton had opened, and that she possesses whatever that great man has taught. Two prodigies have appeared: one, that Newton has written this work, and the other, that a lady has translated and explained it.

This was not her first essay; for she had before given to the public an explanation of the philosophy of Leibnitz, under the title of *Institutions de physique adressées à son fils*, to whom she herself had taught geometry.

The Preliminary Discourse, which is at the head of these institutions is a master-piece of reason and eloquence; she has spread over the rest of the work a degree of method and perspicuity which Leibnitz never possessed and which his ideas require, whether it be for the purpose of understanding or refuting them.

After having rendered intelligible the invention of Leibnitz, her mind become more acute and mature by

the work, revolted at a system of metaphysics at once so bold and so ill founded, and she concluded it not worth her attention. Her soul was formed for the sublime, but the charms of truth had a superior influence. She perceived that the doctrine of Monades and a pre-established harmony deserved to be placed with the three elements of Descartes; and that systems, however ingenious, did not merit her application, while they possessed no other requisite. Therefore, after having had the courage to explain and embellish Leibnitz, she had the courage to abandon him. An exertion rarely made after an opinion is once embraced, but which is not difficult to a mind that is enamoured with truth.

Deprived of all hopes from systems, she adopted for her rule that of the royal society of London, *nullius in verba*; and because the excellence of her judgment had made her averse to parties and systems, she gave herself entirely to Newton. In fact, Newton never made a system, he never proceeded upon supposition, nor laid down any position which is not founded on the most sublime geometry or proved by incontestable experiments. His conjectures, which are inserted at the end of his book, under the name of queries, are nothing more than doubts or suspicions; he offers them only as such, and it is natural that he, who never affirmed any but the most evident truths, should doubt of all the rest.

Every principle which he has given is truly worthy of the name. They are the first agents of nature, which were unknown before his time; and it is no longer allowed for any one to pretend to be a natural philosopher without a knowledge of them.

We must therefore be careful not to look upon this book as a system, that is to say, as a heap of probabilities which may serve to explain either well or ill some of the effects of nature.

If there yet remained any one absurd enough to support the doctrine of a subtile matter (or first element) a perforated matter (or second element) who can affirm
that

that the earth is a sun encrusted with opaque matter, that the moon has been drawn into the vortex of the earth, and that the subtle matter is the cause of gravity: if such a man were found who maintained these and the other romantic opinions which were substituted instead of the ignorance of the ancients, we should say he was a Cartesian: if he believed the doctrine of the Monades, we should say he was a Leibnitzian: but we should not say of one who understood the elements of Euclid, that he was an Euclidean; nor of one who from Galileo became acquainted with the properties of projectiles, that he was a Galileist. In like manner, they who in England have learned the method of fluxions, who have made the experiments on light, or who know the laws of gravitation, are not called Newtonians: it is the privilege of error to give its name to a party. If the discoveries of Plato had been founded in truth, there had been no Platonists, and all the world would by degrees have received what he taught; but because, in the ignorance with which the earth is overspread, some are attached to one error, and others to another, men have ranged themselves under different standards. There have been Peripatetics, Platonists, Epicureans and Zenonists as well as there have been sages.

If, at this day in France the philosophers who have added their discoveries to those with which Newton has indulged the human race, are called Newtonians, it proceeds from the remains of ignorance and prejudice. The prodigious multitude of those who know little, and of those whose knowledge is superficial, imagine that Newton has done nothing more than oppose Descartes, much the same as Gassendi has done. They have heard his discoveries mentioned, and they suppose them to be a new system. Thus it was when Harvey had demonstrated the circulation of the blood, that opposers rose up against him in France. They called those men Harveyists and Circulators, who were daring enough to embrace a new truth which the public took to be no more than an opinion. It must be confessed that all the new discoveries have come from us to other countries
and

and were not received without the most violent contradictions. It is not then surprising that the universal gravitation of matter, though proved by demonstration, should also meet with opposition.

The sublime truths, for which we are indebted to Newton, were not entirely established in France till after a whole generation had grown old in the errors of Descartes; for truth, like merit, finds enemies in its cotemporaries.

Turpe putaverunt parere minoribus, & quæ
Imberbes didicere, senes perdenda fateri.

Madame du Châtelet has rendered a double service to posterity in translating the *Principia* and enriching it with a commentary. It is true that the Latin language in which it is written is understood by all the learned; but it is always in some degree fatiguing to read an abstracted subject in a strange language. Besides which the Latin has not terms to express those mathematical and physical truths which were unknown to the ancients.

It has been necessary for the moderns to form new words to express these new ideas, which is a grand inconvenience in the perusal of books of science; and it must be allowed, that it is not less painful to write these books in a dead language, to which it is always necessary to add expressions unknown to antiquity, and which may cause doubt or embarrassment. The French, which is the current language of Europe, and is enriched with all these new and necessary expressions, is much more proper than the Latin for the propagation of these new sciences.

As to the algebraical commentary, it is a work that exceeds the translation. Madame du Châtelet has worked upon the ideas of Mr. Clairaut, she made all the calculations herself, and when she had finished a chapter, Mr. Clairaut examined and corrected it. But this was not all: in a work of so much labour, a mistake might easily happen: in writing it is very possible to substitute one sign for another. Mr. Clairaut therefore had the calculations again examined by a third person

person after they were transcribed fair, so that it is morally impossible for an error of negligence to have crept into the work: and what is at least an equal advantage is, that a work to which Mr. Clairaut has put his hand cannot fail of being excellent in its kind.

In proportion to the astonishment which must seize us to find a woman capable of undertaking a work that required such an extensive information, and so severe a degree of attention, so much are we induced to lament her untimely loss: she had not intirely finished her Commentary when she foresaw the approach of death. She was jealous of her glory and had none of that pride of false modesty, which consists in seeming to despise what we wish for, and desiring to appear superior to that true glory, which is the sole reward of those who serve the public, the only object worth the attention of great minds, which it is becoming to seek, and which those only pretend to despise who are incapable of obtaining.

It was this regard she had for her fame which determined her some days before her death to place her book, entirely written by her own hand, in the King's library.

To this passion for glory she added a simplicity or want of affectation which is not always found to accompany it, but which is frequently the consequence of serious studies. Never was there a woman so learned as *her*; and never was there a woman who had less of the affectation of it. She never spoke of science but with those from whom she expected to receive information: ostentation never was her motive for speaking. She was never seen in those assemblies where a kind of warfare of wit is carried on, in which is established a kind of Tribunal to determine the merits of the literary productions of the age, the authors of which in return do not fail to criticise their judgment with equal severity. She lived long in societies who were ignorant of her great merit and was not at all solicitous to remove that ignorance.

The ladies who played with her at the Queen's, were far from suspecting that they were in company with the
commen-

commentator of Newton; they took her for an ordinary person, excepting when occasionally she astonished them with the rapidity and exactness with which she performed accounts and terminated differences; when a combination was required to be made, the philosopher could no longer be concealed. I was once present when she divided a number to nine places of figures by a divisor which consisted of as many, intirely by memory, to the surprise of a geometrical who was present, but was incapable of following her.

Blest by nature with a singular eloquence, that eloquence was not exhibited but on subjects worthy her great abilities; those letters whose purpose is to display the wit, those minute elegancies of language, those delicate turns which are given to common thoughts did not suit with the immensity of her talents. Propriety, precision, justice and force formed the character of her eloquence, she would have written rather like Pascal and Nicole than like Mad. de Sévigné. But this severe firmness, this vigorous temper of her mind did not render her incapable of relishing the beauties of sentiment. She was alive to all the charms of poetry and eloquence, and never ear was more sensible of harmony. She knew by heart all the best verses, and could not endure those that were indifferent. It was an advantage she enjoyed over Newton to unite to the depth of philosophical knowledge, a taste the most lively and delicate for the *belles lettres*. The philosopher is to be pitied who is confined to dry truths and to whom the beauties of fancy and sentiment are lost.

From her earliest youth she had matured her genius by reading the best authors in more than one language. She had begun a translation of the *Æneid*, several fragments of which I have seen, which were filled with the spirit of her author: she afterwards acquired the Italian and English: Tasso and Milton were as familiar to her as Virgil: but she made a less progress in the Spanish, being informed that there is but one book of merit in that language, and that that book is trifling.

The

The study of her own language was one of her principal occupations. She has left a set of remarks in manuscript, in which may be discovered, among the uncertainty and irregularity of grammar, that philosophic spirit which ought to prevail in every research, and which is the clue to every labyrinth of science.

Among such a variety of works, which the most indefatigable of the learned would hardly have undertaken, who would have imagined that she found time, not only to perform all the duties of society, but even to engage with pleasure in all its amusements? She engaged in most of them with the same avidity as in study. Every thing that employs the attention of the world contributed to her amusement, scandal excepted. She was never known to return a sarcasm. She had neither time nor inclination to notice them; and when she was told that certain people had not done her justice, she replied, it was a circumstance she wished to be ignorant of. One day a miserable pamphlet was shown to her in which, the author, who was not in a situation to be acquainted with her, had dared to speak ill of her; she replied, that if the author had thrown away his time in writing things to so little purpose, she would not lose her time in reading them; and the next day being informed that he was in confinement for the libel, she wrote in his favor, without his ever being acquainted with it.

She was lamented at the court of France as much as is possible in a country where personal interest so easily obliterates every thing else. Her memory was dear to all those who had the happiness to be particularly acquainted with her, and who enjoyed opportunities of seeing the vastness of her genius and the greatness of her mind.

It had been happy for her friends if she had never undertaken that work which the learned enjoy: we may say of her while we deplore her fate, *perit arte sua*.

She believed herself to be verging towards her end, long before the time of that stroke by which she was taken from us. From that time she attended to nothing but to employ the short time she foresaw was remaining, in finishing the work she had begun, in snatching from

the hand of death that which she regarded as the better part of herself. The ardor and obstinacy with which she applied herself to the work, and continual watchings, at a time when rest might have saved her, brought on at length that death which she had foreseen. She perceived her end approaching, and by a singular combination of sentiments which seem to clash with each other, she appeared at the same time to regret at the loss of life and to meet death with intrepidity. The pain of an eternal separation, sensibly afflicted her soul; but the philosophy with which that soul was filled left her in possession of all her courage. A man who with sorrow tears himself from his disconsolate family, and in tranquillity makes the preparations for a long journey, is but the faint portrait of her grief and her firmness. So that those who were witnesses at her last moments were doubly sensible of her loss by their own affliction and by her regrets, at the same time that they were compelled to admire the force of her mind, which to sorrow so touching had joined a constancy so firm and unshaken.

She died at the palace of Lunéville, the 10th of August, 1749, at the age of forty-three years and a half, and was interred in the chapel adjoining.

A N
E P I S T L E
O N T H E
P H I L O S O P H Y O F N E W T O N .

TO THE MARCHIONESS DU CHATELET.

IMmortal Emily! enlighten'd sage!
Genius of France! Instructress of the age!
Rouz'd at thy voice, illumin'd by thy light,
Virtue and truth engage my ravish'd fight:
No more the fancied triumphs of the stage,
The laurels of the muse no more engage,
My mind looks down on all their puny rage.

}

Let envious Rufus, grov'ling on the earth,
Vainly attempt to give his malice birth;
Still let him toil and labour to rehearse
The vilest wit, in execrable verse:
Weekly let stupid Zoilus raise his voice,
And vent his little spite in jarring noise:
Unheeded let them raise their hate-form'd cry,
The philosophic mind can envy's force defy.

By Newton led thro' heaven's extended space,
And taught the wonders of the sky to trace,
The soul, serene beyond earth's narrow bound,
Fears not the shaft, nor feels th' envenom'd wound.

Hence with these vortices: this shapeless heap,
That without space, mysterious motions keep:
Those learned phantoms quit my clouded sight,
And day shines forth in radiant splendor bright;
Motion resumes its firm establish'd laws,
And truth appears to vindicate her cause.
Space, which contains th' immensity of God,
Is of this universe the vast abode;
This universe, so vast to human race,
Is but an atom in the wilds of space.

God speaks, and at his word the chaos ends,
 At once all nature to her center tends.
 The law of gravitation thus obtains,
 And harmony thro' endless systems reigns :
 Yet, long to dark obscurity consign'd,
 This mighty pow'r lay hid from mortal mind,
 Till Newton bade geometry arise,
 And open all the secrets of the skies.

Newton ! whose hand disclos'd the web of light,
 Whose brilliant colours charm the dazzled sight !
 Parent of seasons ! giver of the day !
 Newton did first thy varied robe display ;
 'Twas he display'd the ruby's fulgent die,
 The blooming orange soft'ning in the eye,
 The golden yellow, green that sooths the view,
 The deep azure, and violet's sickly hue,
 With all the nameless colours of thy rays,
 Which, blended, form the bright meridian blaze ;
 Colours which thro' the works of nature glow,
 And life and beauty give to things below.

Ye heav'nly pow'rs ! who burn with holy love,
 Who near the throne of God with rapture move ;
 Say, mighty seraphs, when a mortal man
 Developed all creation's glorious plan,
 How great your admiration was to find
 A son of earth possess'd of such a mind ?

His potent numbers mark the swelling tide,
 When the wide ocean heaves with tow'ring pride ;
 And when again the centripetal force,
 Back to the shore reverberates its course.

Ye comets ! flaming thro' the spangled sky,
 Once wont with dread to fix th' astonish'd eye,
 By anxious mortals view'd with more amaze,
 Than ev'n the pallid lightning's keenest blaze :
 Swift may ye thro' your long ellipses run,
 And oft return undreaded to the sun ;
 Time shall at length your rapid speed delay,
 And with your orbs restore the sun's decay.

And thou, O moon ! whose light fantastic round
So long escap'd the ken of sage profound,
Proceed, and lend the night thy silver ray,
Newton has fix'd the limits of thy sway !

Be chang'd O earth ! in silence as you roll,
Swell at th' equator, flatten at the pole :
Thou steadfast pole ! avoid the frozen bear,
And, slowly moving, trace thy wond'rous year ;
When thirteen thousand summers twice are past
Thy present site shall be restor'd at last.*

How great these themes ! they all the mind control !
These beauteous truths enchant the active soul,
While, far remote from every mortal thing,
We hear the voice of heaven's eternal king,

How vast Emilia's mind, whose early youth,
Delighted, listens to the voice of truth :
Amaz'd I see her scorn all meaner joys,
The song of pleasure, grandeur's empty toys ;
Yet still when I behold her arduous flight,
My wonder rises to its utmost height :
No common mind can Newton's course attend
In the dark maze where nature's limits end.

Happy my fate, might I this cause advance,
And teach the voice of truth to lift'ning France :
While Algarotti,† ever sure to please,
Uniting lively wit with learned ease,
Conducts the stranger to Ausonian lands,
Who thus adorn'd springs lovelier from his hands ;
Led by his great example, thus display'd,
Unskill'd I'll try to paint th' immortal maid :
Tho' much I fear that fancy's gaudy dream
Instead of bright'ning, will obscure the theme ;
For truth, like you, seen best without disguise,
Divinely simple, charms our wond'ring eyes.

* The period of the precession of the equinoxes, which is accomplished in twenty six thousand nine hundred years, or thereabouts. V.

† Mr. Algarotti, a young Venetian, published at Venice at that time a treatise on light, in which he explains the doctrine of attraction. Mr. Voltaire was the first in France who explained the discoveries of this great man. V.

T H E
NEW EPISTLE DEDICATORY
TO THE
E D I T I O N O F 1745.

TO THE MARCHIONESS DU CHATELET.

M A D A M,

SINCE the time I first placed your respectable name at the head of these Elements of Philosophy, I have applied to you for instruction. But you have since taken a flight which I am incapable of following. I find myself, at present, in the situation of a grammarian who has presented an essay on rhetoric to Demosthenes or Cicero. I offer the simple elements to one who has penetrated into all the depths of the most transcendent geometry, and who, alone among us, has translated and explained the works of the great Newton.

This philosopher, during his life-time, was in possession of all that glory which he so justly deserved; his merit excited no envy, because it was impossible he should have a rival. The learned world became his disciple, and the rest admired without pretending to understand him. But the honor which you have conferred on him, is without doubt the greatest he has ever received. I am at a loss which to admire most, Newton the inventor of the doctrine of fluxions, who discovered the laws of nature, and who analysed the light, or you, madam, who, in the midst of the diffusions which attend your rank in life, are so perfectly acquainted with all his discoveries. They who see you at court, can, certainly, never imagine you to be a commentator on philosophy: and the learned, who are sufficiently so to read your productions, must still less suppose that you descend to the amusements of the world with the same facility that you apply to the most sublime truths. That simplicity and that modesty, which

are in themselves so estimable, but which so seldom accompany genius and science, oblige us at least to forgive you the great merit you possess. This, in general, is all that can be hoped for from the greater part of mankind; but the small number of superior minds who have attended to the same studies as yourself, will have the greatest veneration for you, and posterity will regard you with astonishment. I am not surpris'd that your sex have reigned with glory over large empires. A woman with a good council may govern like Augustus; but to penetrate by the most indefatigable labour into truths, the approach to which intimidates most men, to acquire, in the hour of leisure, a perfect acquaintance with sciences, which the studious consume their whole lives to attain; this, madam, is a perfection which you alone possess, and which will very seldom be paralleled, &c.

TO THE ABBOT P—,
CONCERNING THE
ELEMENTS OF NEWTON, 1738.

I Have received, sir, by the post, one of your periodical reviews, in which you give an account of the new edition of the Elements of Newton. I have likewise received several other prints on the same subject. As I think I have in speaking of this work several things to say which may be in some degree useful to the literary world, you will be so good as to insert the following reflections in your publication.

It is true, as you say, that I have sent to many of the literary journals a set of explanations in form of a preface to answer the purpose of a supplement to the Dutch edition, and I find that the authors of the *Journal de Trévoux* were so obliging as to insert them a month ago in their Journal. If the new editors of the Elements of Newton have placed this preface at the head of their edition, they have in that respect fulfilled my intentions.

I observe by yours that the editors have printed this singular phrase in their preface, *qu'une maladie a ECLAIRÉ la fin de mon ouvrage*; that a fit of sickness has illustrated the conclusion of my work: and you say, that you cannot imagine how the conclusion of my work could be illustrated by a fit of sickness. This I am no more able to conceive than yourself. But was it not *retardé* (retarded) in the manuscript instead of *éclairé*? That which, perhaps, is more difficult to imagine is, that the printers should be guilty of such faults and not correct them. Those who have had the care of this second edition, ought to have been so much the more exact as they reproach the editors of Amsterdam with errors that have occasioned misapprehensions still more singular.

As I have no interest in any respect in any of these editions, nor in that edition of my works which they say is preparing in Holland, I am exactly in the same situation as other readers. I purchase my book like the rest, and give the preference to that edition only which appears to me the most correct. It

It hurts me to observe the extreme negligence with which most books have of late been printed. There are, for instance, few theatrical pieces in which there are not whole verses intirely omitted. I have lately remarked four which are wanting in the comedy of *Glorieux*; which is so much the more disagreeable as few comedies deserve to be better printed. I believe, Sir, that you will render a new piece of service to literature, in recommending that exactness which is so necessary, but at this time so much neglected.

I would advise the editors of all works of instruction to print cartons instead of errata, for I have observed that few readers will give themselves the trouble to consult the errata: the consequence then is, either they take the errors for truths or they make hasty and unjust criticisms.

The following recent instance deserves to be published, that in future, readers who wish to be instructed, or critics who wish to stigmatize may be more upon their guard.

A little pamphlet has appeared without the name of either author or printer, in which is displayed a much greater attention to my person than to the philosophy of Newton: its title is *Lettre d'un Physicien*, &c. A letter from a philosopher on the Newtonian philosophy.

The author, who is probably my enemy without knowing me, which is a circumstance but too common in the republic of letters, explains himself thus at my expence, page 13. "It is unnecessary to make reflections upon so considerable an error, all the world must make them, and they would be too humiliating for Mr. Voltaire."

It is curious to behold, what this considerable error is that occasions reflections so mortifying. The following is the passage in my book: "There is formed * an

* The reader, who is acquainted with optics, will perceive that the passage even as it is given here is erroneous; for tho' an object at the distance of two feet is seen under the same angle as another which is twice as large but at the distance of four feet, yet it does not follow that one and the same object should be seen under twice the angle at half the distance. Thus for example, in the simple case of a right line,

“ angle in the eye twice as large when I view a man at
 “ two feet distance, as when I view him at the distance
 “ of four feet ; nevertheless I always see this man of
 “ the same magnitude. How happens it that my
 “ perception thus contradicts the mechanism of my
 “ organs ?”

Whether it arise from the carelessness of the copier, the mistake of figures, or the inattention of the printer, it appears that the Amsterdam editor has put the word *two* instead of *four*, and in the place of the word *four* has printed *two*. The Dutch corrector of the press observed the error, and did not fail to note it in his list of errata at the end of the book. But the critic never gave himself the trouble to consult the errata. He is not candid enough to suppose that at least I may understand the first principles of optics. He rather chuses to blame me for a slight error of the press, easy to be corrected, and to enjoy the malignant pleasure of saying ill-natured things. What an incurable malady must that be which leads him to abuse a man whose only fault is that he has taken great pains to render himself useful to the world !

I would wish to be informed, for instance, for what purpose a man who calls himself natural philosopher, and who professes to write on the Newtonian philosophy, begins his work by affirming that I made an apology for the murder of Charles the First. What relation, I beg to know, has the tragical and unjust end of this King, with the refrangibility of rays or the squares of distances ? But where is it that I have apologized for this execrable piece of injustice ? Is it in this book that the critic reproaches me with, without regarding that I have already shewn that it contains twenty entire pages which are not mine, and that the whole is every where altered and mutilated ? I have consulted this book in which this murder is spoken of, a murder as much the more shocking as the legislative sword was employed in the commission of it. I there find it compared with the

line, whose ends are equally distant from the eye, the tangent of the optic angle, and not the angle itself, will be inversely as the distance. N.

crime

crime of Ravaillac, of the Jacobin Clement, and with the still more enormous crime of the priest who availed himself of the body of Jesus Christ in the communion, to poison the Emperor Henry VII. Is this a justification of the murder of Charles I? Is it not on the contrary to rank it amongst the greatest of crimes?

It is with the same justice that this critic, always attacking of me instead of my works, pretends that I formerly said "Mallebranche not only admits of innate ideas, but affirms that we see every thing in God."

I do not remember ever to have written the above, but have the justice to believe that he from whom it is taken had doubtless a quite contrary intention, and that he said, "Mallebranche not only denies innate ideas, but affirms we see every thing in God." In fact, who can have read the *Recherche de la Verité* without especially remarking the fourth chapter of the third book *de l'Esprit pur*, part the second? I have now before me a copy, with marginal remarks I made fifteen years ago. But this is not a place to examine the question. My only intention is to expose the injustice of precipitate critics, to make a man enter into himself, who without doubt will repent of his faults when they are pointed out to him; and in short, to remind all critics of an old truth they are always forgetful of: that reproach is no argument.

I have never answered those who have chosen, which is no difficult matter, to depreciate the poetical works I have written in my youth. The reader may criticise *Zaire* or *Alzire*, or the *Henriade*; I shall not take up the pen to prove that he is wrong in not having received pleasure from them; but the same silence ought not to be kept when a work of philosophy is concerned. It is necessary sometimes to remove specious objections, sometimes truths require elucidating and frequently errors must be renounced. I may here find myself, at the same time, in each of these situations, notwithstanding which, I do not think myself bound to answer the present pamphlet at full length.

When more reasonable objections are offered, I shall answer either by correcting myself or by demanding a fresh explanation; for I can have no other aim than the truth. I do not believe that, four or five arguments excepted, there is any thing of my own production in the Elements of the new Philosophy. It appeared true to me, and I wish to place it within the observation of an ingenious nation, that seems not to be sufficiently acquainted with it. The names of Galileo, Kepler, Descartes, Newton, Huygens, are to me indifferent. I have calmly examined the notions of these great men which I could conceive. I have published them after my manner of conception, and am ready to retract when I shall be shewn to be in an error.

It is only necessary to be observed, that most of the opinions with which I am reproached, are to be found in Newton or in the books of Messrs. Keil, Gregory, Pemberton, Gravesande, Muschenbroek, &c. and that it is not in a simple pamphlet written with precipitation that opinions are to be combatted, whose proofs are found in books which were the fruit of many years study and reflexion.

I perceive that the terms gravitation or attraction are what give so much pain to my countrymen. I repeat again that they need only peruse the dissertation of Monsieur Maupertuis on this subject, in his book *De la Figure des Astres*, &c. they will see that the idea of impulsion, which they think they know, is no more perfect than that of attraction, whose existence they think they ought to oppose. After reading this book, they may examine the fifteenth, sixteenth and seventeenth chapters of the Elements of Newton, and see if the arguments which are urged against a plenum and vortices are sufficiently convincing. It becomes every one to seek additional arguments. Geometrical philosophers are invited, for example, to consider whether since the versed sine of the arc, which the earth passes through in a second, is fifteen feet, it be possible for any fluid to act with a force sufficient to produce the effect.

I beg them to enquire, since the lengths of pendulums

lums are as the squares of their oscillations, if a pendulum whose length is equal to the semi-diameter of the earth be compared with our pendulum for seconds, whether weight, which alone causes the vibration of pendulums, can be the effect of a vortex circulating about the earth, &c. When they shall have weighed on the one side all the mathematical absurdities which seem to embarrass without end the doctrine of vortices; and on the other, the single and dubious hypothesis which admits them, the determination will not be difficult to be made.

Very great philosophers who have done me the honor to write to me letters, rather more polished than those of the anonymous author, are desirous of retaining the mechanism which Descartes has introduced into physics. I respect the memory of Descartes and I respect them. It is without doubt proper to reject occult qualities; we should examine the universe like a clock; but when the established mechanism fails, when all nature conspires to discover a new property of matter to us, are we to reject it because it is inexplicable by the common or ordinary mechanism? Where can be the great difficulty of admitting that God has given to matter the property of gravitation as he has given it inertia, mobility or impenetrability? I believe the more we reflect, the more we shall be induced to think that gravity, like mobility, is an attribute given immediately from God to matter: he could not create it without extension, but he could without weight. For my part, I perceive no other cause for this property of bodies but the omnipotent hand of the supreme Being. I have dared to say, and I again repeat it, that if the existence of vortices were possible, it is necessary that gravity should be one of the forces by which their circular motion is effected. It is even necessary, supposing these vortices to exist, that gravity be acknowledged as a primordial force resident at their center.

I am blamed for regarding gravity after the example of so many great men, as a property of matter: and I, for my part, reproach myself, not for having regarded

garded it in this light, but for having gone farther than Newton in that respect, and affirm, which he never did, that light possessed that quality. *It is matter, said I, therefore it gravitates.* I ought to have said only *therefore it is very probable that it gravitates.* Mr. Newton in his *Principia* seems to think that light has not this property which God has given to other bodies, of tending towards a centre. I have been rash enough to avow a contrary sentiment; by which, at least, it will be seen that I am not the slave of Newton, though it were very pardonable to be so. I conclude because I have too many things to say. It is for those whose knowledge is greater than mine to render more intelligible the truths of which I have been only the feeble interpreter.

I have the honor to be, &c.

E L E M E N T S
O F T H E
P H I L O S O P H Y O F N E W T O N
I N T H R E E P A R T S.

P A R T T H E F I R S T.

C H A P T E R T H E F I R S T.

O F G O D.

Arguments which will not suit the Taste of every one. The
Arguments of Materialists.

NEWTON was intimately convinced of the being of a God, and understood by this word, not only an infinite, almighty, eternal and creating Being, but a governor who has constituted a relation between himself and his creatures; for without that relation the knowledge of a God is no more than a barren and useless notion, which seems to invite to wickedness by the hopes of impunity.

In consequence, this great philosopher makes a singular remark at the end of his Principia. It is, that we do not say *my eternal* or *my infinite*, because these attributes bear no relation to our nature; but we say, and that with justice, *my God*; and by that expression we ought to understand our governor and the preserver of our life, the object of our thoughts. I remember in many conferences

ferences I had with Dr. Clarke, in the year 1726, that that philosopher never pronounced the name of God, but with a very remarkable air of recollection and respect. I avowed to him the impression it made upon me, and he informed me, that he had insensibly acquired the habit from Newton, a habit which, in fact, ought to be that of every man.

The whole of the philosophy of Newton leads necessarily to the knowledge of a supreme Being, who has created all things, and disposed of them with perfect liberty. For if the universe be finite, or if there be a vacuum, matter exists not by necessity; it has therefore received existence from a freely acting cause. If matter gravitate, as is demonstrable, it does not appear to gravitate of its own nature, in like manner as it is extended of its own nature: it has, therefore, received the power or quality of gravitation from God. If the planets revolve in one direction rather than another, in a non-resisting space, the hand of their Creator must have directed their motions in that direction with an absolute liberty.

It were well if the pretended principles of Descartes conducted the mind in the like manner to the knowledge of its Creator. God forbid that, by the most horrible calumny, I should accuse that great man with despising that God, to whom he owed so much, and who had raised him above almost all the men of the age he lived in. I say only, that the ill use, to which he has sometimes applied his genius, has conducted his disciples to precipices, from which their master was far removed; I say that the Cartesian system has produced that of Spinoza: I say that I have known many whom the Cartesian doctrine have induced to admit no other God than the immensity of things, and on the contrary, that I never saw a Newtonian who was not a theist, in the strictest sense of the word.

When one is persuaded, with Descartes, that it is impossible for the universe to be finite, that the quantity of motion in the universe is ever equal and the same; when we presume to say, give me matter and motion,
and

and I will form a world ; then, it must be confessed that these positions seem, by consequences too just, to exclude that of a Being sole infinite, sole author of motion, and sole author of the organisation of substances.

Many will perhaps be surprised that, of all the proofs of the existence of a God, that which is deduced from final causes should appear the strongest in the eyes of Newton. The design, or rather the designs varied to infinity, which shine forth in the most vast as well as in the most minute parts of the universe, form a demonstration, which, because dependent on sense, is almost despised by some philosophers ; but in short, Newton concluded that the infinity of arguments, of which he saw more than any other man, were the work of an infinitely skilful artist.

He did not much admire the grand proof, which is drawn from the succession of beings. It is commonly said that, if men, animals, vegetables, and every thing that composes the world were eternal, it would be necessary to admit a series of generations without a cause. These beings, say they, had no origin to their existence ; they had it not from without, because they are supposed to remount from generation to generation, without beginning. They had it not from within, because no one of them existed of itself. And thus every thing would be effect without cause.

He perceived that this argument was founded on the equivocal of the words generations and beings, formed the one by the other ; for the atheists who admit a plenum, reply that, properly speaking, there are no generations ; there are no beings produced ; there is no plurality of substances. The universe is a whole, which exists necessarily, and which necessarily develops itself ; it is a being ever the same, the nature of which is to be unchangeable in its substance, and eternally varied in its modifications. Thus the argument, drawn solely from the succession of beings, proves, perhaps, very little against the atheist who denies the plurality of beings.

The atheists have called to their assistance the old axiom, that nothing can produce nothing, that one substance

stance cannot produce another, that every thing is eternal and necessary.

Matter is necessary, said they, because it exists; motion is necessary, and nothing is at rest; and motion is so far necessary, that the moving forces are never lost in nature.

That which exists to day was in being yesterday; by the same argument it existed the day before, and so on; we may recur to an endless precession of days. There is no person so hardy as to say, that things will return to nothing, how then can we presume to say they came from nothing?

No less than the whole book of Clarke is necessary to answer these objections.

In a word, I do not know if there be a proof in metaphysics, more striking to the mind of man, than that admirable order that reigns throughout the world, or if there be a more convincing argument than this verse, *the heavens declare the glory of God*. And thus you see that Newton uses no other at the end of his *Optics* and his *Principia*. He found no reasoning more convincing and admirable in favour of the Divinity than that of Plato, who makes one of the persons in his dialogues say, You conclude that I have an intelligent soul, because you perceive order in my speech, and actions; believe then from the order you see in the world, that there is a sovereign and intelligent mind.

If it be proved that an eternal, infinite, omnipotent Being exists, this does not prove that this being is infinitely good, in the sense we give the term.

Here is the grand refuge of the atheist: if I admit of a God, says he, this God ought to be goodness itself. He has given me being and ought to make me happy: now I see nothing among the human race but calamity and disorder: the necessity of matter eternally existing, is a belief that shocks me less than that of a Creator who can treat his creatures so ill. I am not to be satisfied, continues he, my just complaints and excruciating doubts are not to be removed by the information
that

that a first man, composed of a body and soul, offended the Creator, and that mankind are subjected to the punishment; for, in the first place, if our bodies proceeded from this first man, our souls did not; and, even supposing they did, this punishing the whole race for the crime of a father, appears to be the most horrible of all injustice. Secondly, it seems evident that the Americans and the people of the old world, the negroes and the inhabitants of Lapland are not the descendants of the same man. The internal structure of the organs of negroes is a palpable demonstration; no argument, then, can appease the murmurs which arise in my heart, at the evils with which the world is overspread. I am then, of force, obliged to reject the idea of a Supreme Being, of a Creator whom I should conceive to be infinitely good, but who has produced an infinity of evil; and I prefer the belief of the necessary existence of matter and endless generations and mutations to that of a God who willingly hath created beings to be unhappy.

To this atheist it is answered, that the words good and happiness are indeterminate. That which, with regard to you, is evil, is good in the general arrangement. The idea of an infinite, omnipotent, omniscient and omnipresent Being does not contradict your reason. Will you then, deny a God because you have had a fever? He ought to make you happy, you say; what reason have you to think so? what treaty have you with him? Nothing then is wanting to induce you to believe a God, but continued happiness through life. But why should you, who in no other respect are perfect, think to be so in this? Suppose, that, during an hundred years of continued happiness, your head was once to ach; would this moment of pain make you deny your Creator? it is not probable. Now, if a quarter of an hour of pain would not destroy your opinion, why two hours? why a day? why should a year of torment make you reject the idea of a supreme and universal Power?

It is proved that the proportion of good in the world exceeds that of evil, because few wish for death; you are therefore wrong to carry your complaints in the name of
all

all mankind, and still more so to deny your sovereign, on pretence that some of his subjects are unhappy.

We love to complain: there is a pleasure in bemoaning ourselves, but it is a greater pleasure to live. We delight to cast our eyes on the evil, and to exaggerate it. Read history; they tell us, it is every where interwoven with crimes and misfortunes. Agreed: but history is only the picture of great events. The remembrance of a tempest is preserved, but calms are taken no notice of. It is not suspected that during the space of an hundred years there has been no sedition in Pekin, in Rome, in Venice, in Paris, in London, and, in general, that there are more quiet than turbulent years in all great cities; that there are more days of innocence and serenity than days marked by great crimes or disasters.

When you have examined the agreement, which subsists between the several parts of an animal; when you see the design, which is marked in all its parts, in the manner it receives and sustains its life, and in which it gives life, or propagates, you acknowledge, without difficulty, the sovereign Artist. Will you change your opinion, because wolves destroy sheep, and spiders destroy flies? do not you see, on the contrary, that these generations, continually destroyed and reproduced, enter into the plan of the universe? I behold contrivance and power, you reply, but I see not goodness. But why? would you chuse to be called destroyer and wicked because you breed up animals which serve you for food? yet you accuse the master of all cruelty because he has created animals to be eat in their turn. In short, if you can be happy thro' all eternity, are any troubles, or pain, which may arise during the transient instant which we call life, worth speaking of? And if that eternity be not your lot, be content with this life, since you love it.

You conclude, that the Creator is not good because evil exists. But is that necessity which you would substitute in the place of a Supreme Being, a thing that is to be preferred? In the systems which admit of a God, there are difficulties to be surmounted, but in every other system there are absurdities to be swallowed.

Philosophy

Philosophy shews us that there is a God; but it is incapable of informing us what he is, what he does, how he acts and for what reasons; whether he exists in time or space; whether he has commanded once or continually acts; whether he exists in matter, &c. &c. To know and conceive these things is not within the power of created beings, infinity alone is equal to it.

C H A P. II.

Of Space and Duration, as related to God.

The Opinion of Leibnitz. The Opinion and Argument of Newton. The infinity of Matter impossible. Epicurus ought to have admitted of a God, Creator and Governor. Properties of pure Space and of Duration.

NEWTON regards space and duration, as two beings whose existence follows necessarily the existence of God himself; for the infinite Being is in every place, therefore space exists; the eternal Being endures from all eternity, and therefore eternal duration is a real thing.

Newton happened to say at the end of his Optics, "Do not these phenomena make it appear that there is an incorporeal, living, intelligent Being, every where present, who in infinite space, as it were in his *Sensorium*, sees, discerns, and comprehends every thing in the most intimate and perfect manner?"*

The celebrated philosopher Leibnitz, who had before, with Newton, acknowledged the reality of pure space and duration, but who for a long time had ceased to correspond with Newton, and had established a school in Germany in opposition to him, attacked these expressions of the English philosopher, in a letter which he wrote in 1715, to the late queen of England, spouse to George II. This princess, worthy to hold a corres-

* The passage, as it is here quoted, is not found in Newton. N. pondence

pondence with Leibnitz and Newton, established a regular dispute by letters between the two parties. But Newton, an enemy to disputes and sparing of his time, let Dr. Clarke his disciple in philosophy, and at least his equal in metaphysics, enter the lists in his stead. The dispute turned upon almost all the metaphysical ideas of Newton; and is, perhaps, the finest monument we have of literary disputes.

Clarke begins by justifying the comparison Newton had made of the *Sensorium*. He establishes, that no being can act, know or see where it exists not; now God acting and seeing every where, acts and sees in all the points of space, which in this sense alone can be considered as his *Sensorium*, allowance being made for the impossibility of expressing one's self in any language, when we presume to speak of God. Leibnitz maintains, that space is nothing except the relation we conceive between co-existent beings, nothing except the order, arrangement, distance, &c. of bodies. Clarke after Newton, maintains that, if space be not real, an absurdity must follow; for if God had placed the earth, the moon and the sun in the place in which the fixed stars exist, provided the earth, the moon and the sun continued in the same order with respect to each other, it would thence follow that the earth, moon and sun would be in the same place in which they are at present; which is a contradiction in terms.

Duration, according to Newton, ought, like space, to be considered as a real thing; for if duration were nothing but the order of succession among the creatures, it would follow, that the thing which is created at this instant, and that which was made millions of years ago, were really created in the same instant, which is again a contradiction. In short, both space and duration are quantities and are therefore positive entities.

It is worth while to attend to that ancient argument, which has never yet been answered. Let a man, at the extreme bound of the universe, extend his arm, that arm will then be in pure space; for it is not in nothing;
and

and if it be averred, that it is yet in matter, the universe must really be infinite, and in that sense God.

Pure space, a vacuum, then exists as well as matter, and it even exists necessarily, whereas matter exists, according to Clarke, in consequence of the free will of the Creator.

But it is replied, you admit of an immense and infinite space; why not allow immensity and infinity to matter, as did many of the ancient philosophers? Clarke replies: space exists necessarily as dependent on the necessary existence of God; it is immense; it is, like duration, a mode, an infinite relation to a being necessarily infinite. Matter is nothing of all this; it exists not necessarily, and if this substance were infinite it would, or must, be either an essential relation to God, or else God itself; now, since it is neither the one nor the other it neither is nor can be infinite.

It may be said in answer to Clarke: matter exists necessarily, without being for that reason infinite, and without being God, it exists because it exists: it is eternal because it exists at present. A philosopher ought not to admit that which he cannot conceive. Now you can neither conceive the creation nor annihilation of matter; it may very possibly be eternal in its own nature; and God, by his nature, may have the immense power of modifying it, but not of producing it from nothing: for to produce a being from nothing is a contradiction: but it implies no contradiction to believe that matter is necessary and eternal, and God necessary and eternal. If space exist by necessity, matter likewise exists by necessity. You ought then to admit three beings; space, whose existence would be real even if there were neither matter nor God; matter which, not being formable from nothing, exists of necessity in space; and God without whom matter could not be organized and animated.

Newton himself, at the end of his Optics, seems to have foreseen these difficulties. He maintains that space is a necessary consequence of the existence of God. God is not, properly speaking, either in space or place; but
God.

God being necessarily every where, by that alone constitutes the immense space and place. In like manner, duration or eternal permanence, is an indispensable consequence of the existence of God. He is neither in infinite duration, nor time, but eternally existing; and by that he constitutes eternity and time. Thus it is that Newton expresses himself, but he has not resolved the problem; it seems he durst not say that God exists in space: he was fearful of engaging himself in disputes.

The immense, extended, inseparable space may be conceived in many portions; for example, the space, in which Saturn is placed, is not that in which Jupiter is placed; but these conceived parts cannot be separated; the one cannot be removed into the place of the other, as one body may be moved into the place of an other. In the same manner infinite duration, which is inseparable and without parts, may be conceived in several portions, without a possibility of imagining one portion to be put into the place of another. Beings exist in a certain portion of duration, which is called time, and can exist in any other time; but a conceived part of duration, a given time, cannot be elsewhere than where it is; the past cannot become the future.

Space and duration then, according to Newton, are two necessary and unchangeable attributes of the immense and eternal Being. God only can know the whole of space; God only can know the whole of duration. We measure certain parts, improperly called space, by means of certain bodies which we touch. We measure certain parts, improperly called duration, by means of motions which we perceive.

We do not here enter into the detail of physical proofs, which are reserved for the other chapters; it is sufficient to observe, that, in every thing which respects space, duration and the limits of the world, Newton adopted the ancient opinions of Democritus, Epicurus, and a number of other philosophers as corrected by our celebrated Gassendi. Newton has often said, to some Frenchmen who are yet living, that he regarded Gassendi as a very exact and penetrating genius,

nus, and that he was proud to be intirely of his opinion on the subjects we have been speaking of.

C H A P. III.

Of Liberty in God, and of the grand Principle of sufficient Reason.

The Principles of Leibnitz. Carried perhaps too far. His seducing Arguments. The Answer. New Instances against the Principle of Indiscernables.

NEWTON maintained that God, possessing infinite liberty as well as infinite power, has made many things, for whose existence there is no other reason than his will alone. For example, that the planets move from west to east rather than otherwise; that there is a certain number of animals, stars or worlds, rather than any other number; that the finite universe exists in this or that region of space, &c. for all which, the will of the Supreme Being is the sole reason.

The celebrated Leibnitz pretends the contrary, and rests his arguments on an ancient axiom formerly used by Archimedes, "Nothing is made without a cause, or sufficient reason" said he, and God has, in every thing, done the best, for, if he has done otherwise, he had not sufficient reason. But there is no best in things indifferent, say the Newtonians; but there are no things indifferent, reply the Leibnitzians. Your idea leads to absolute fatality, replied Clarke; you make God a being who acts by necessity and consequently a being purely passive; that is not a God: Your God replied Leibnitz, is a capricious agent who determines without sufficient reason. The will of God is reason, replied the Englishman. Leibnitz insisted and argued strongly in this manner.

We know no two bodies exactly alike in nature, neither is it possible, for, if they were alike, it would

denote a want of fecundity and power in the all powerful and all producing God. And in the second place there would be no reason why the one should be in a given place rather than the other.

The Newtonians answered; it is false that a number of similar beings denote sterility or want of power in the Creator. For if it be requisite that the elements of things should be absolutely similar, in order to produce similar effects; if the elements of rays of light eternally red, ought to be similar, in order to produce those red rays; if the elements of water ought to be similar in order to constitute water; this perfect resemblance, this identity (of figure, &c.) so far from derogating from the greatness of God is one of the finest indications of his power and wisdom.

If I might presume to add any thing to the arguments of a Clarke or a Newton, and take the liberty to dispute against a Leibnitz, I should observe that an infinitely powerful being alone can form things perfectly similar. Whatever pains man may take in a work of this nature, he can never accomplish it, because his sight is not acute enough to discern the inequalities of two bodies. It is then necessary to see infinite littleness, to be able to make all the parts of a body resemble all those of another. Which acuteness must be the property of an infinite being only.

Secondly, the Newtonians might say, we oppose Leibnitz by his own principles. If the elements of things be all different, if the first or component parts of a red ray be not intirely similar, there is then, no sufficient reason, why different parts should ever produce the same invariable effect.

In the third place, the Newtonians might say, if you demand the sufficient reason why this atom A, is in one place and the atom B, which is perfectly similar to it, in another place; the reason is the motion that carries them along: and if you demand the reason of this motion, you are forced either to avow, that motion is necessary, or that God gave it a beginning. If you demand

demand further why God gave it a beginning, what other sufficient reason can you find than that it was necessary for the execution of the purposes contrived by his wisdom. But why is this motion to the right rather than to the left, to the west rather than to the east, in this point of duration rather than any other? Is it not necessary here to recur to the will of the Creator? But is there a liberty of indifference? We leave that to the examination of the intelligent reader; and he may examine long before he will be able to determine.

C H A P. IV.

Of LIBERTY in MAN.

An excellent Work against Liberty. So excellent that Dr. Clarke answered it by Scurility. The Liberty of Indifference. The Liberty of Spontaneity. Privation of Liberty, a common Thing. Strong Objections against Liberty.

According to Newton and Clarke, the infinitely free Being has given to man a limited portion of his liberty; by which is understood, not only the simple power of applying the thought to this or that object and to begin motion; not only the power to will, but to will freely, fully and efficaciously; and even, in some cases, to will without any other reason than the will itself. There is no man on earth who does not sometimes think he perceives this liberty in himself. Many philosophers think otherwise; they believe that all our actions are governed by necessity, and that we have no other liberty than that of sometimes bearing, with a good grace, the chains which fate has laid on us.

Of all the philosophers who have confidently written against liberty, he who, without controversy, has written with the greatest method, force and perspicuity is Collins, a magistrate of London, author of a treatise on

the liberty of thinking, and many other works as bold as they are philosophical.

Clarke, who was entirely of the opinion of Newton respecting liberty, and who besides maintained its rights as well in quality of Divine to a singular sect of men, as in that of a philosopher, answered Collins in a very spirited manner, and mingled so much bitterness with his arguments that it was evident that he at least felt all the force of his enemy. He reproaches him with confounding all ideas, because Collins had said man was a necessary agent. In which case Clarke says, man is not an agent; but who cannot see that this is no better than chicanery? Collins calls that a necessary agent which produces necessary effects. Of what importance is it whether we call it agent or patient? The point is to know whether it be determined by necessity.

It seems that if we can find one instance in which man is possessed of the liberty of indifference, it will be sufficient to decide the question. Now what instance must we take but one in which we wish to prove our liberty? For example, it is proposed to me to turn to the right or to the left, or to do any other such action, to which I am neither induced by pleasure nor restrained by dislike. I chuse then, and I follow not the dictamen of my understanding whose business it is to point out the best, for in this there is neither best nor worst. What is it then I do? I exercise the right which the Creator has given me, to will and to act, in certain cases, without other Reason than my will itself. I have the right and power of beginning to move on which side I will. If no other cause can here be assigned than my will, why need we go farther for a reason than to the will itself? It seems then probable that we have the liberty of indifference in indifferent things. For who can say that God has not made or could not make us this present? And if he could and we perceive it in our power, what argument can prove we have it not?

Some treat this liberty of indifference as a chimera; they say that to determine without reason is the lot of the insane only; but they do not consider that the
insane

insane are disordered people who have no liberty. They are necessarily determined by the disorder of their organs; they are not masters of themselves and chuse nothing. He alone is free who determines himself. Now, what reason can be given why we should not determine ourselves in indifferent things merely by our will?

We possess the liberty which we call spontaneity in every other case; that is to say, when we have motives, our will is determined by them; and these motives are always the last result of the understanding or the instinct; thus, when my understanding represents, that it is better to obey than to violate the law, I obey the law with a spontaneous liberty, I do voluntarily that which the last dictamen of my understanding obliges me to do. We never perceive this liberty more sensibly than when our will runs counter to our desires. I have a violent passion; but my understanding concludes that I ought to resist that passion; it represents to me a greater good in that victory than in the gratification of my wishes. This latter motive prevails over the other and I combat my desires with my will. I obey, necessarily but willingly, this order of my reason; I do, not that which I desire, but that which I will, and in this case I am possessed of all the liberty the circumstance admits of.

Lastly, I am free in no sense when my passion is too strong and my understanding too weak, or when my organs are deranged; and unhappily this is a situation in which men too often find themselves; so that it seems spontaneous liberty is to the mind what health is to the body; some persons have it intire and lasting; many lose it frequently; and others are disordered all their lives. I observe that all the other faculties of man are subject to the same inequalities: the taste, the strength, the gift of thought, is sometimes stronger, sometimes weaker; and our liberty like the rest is limited, variable, and, in short, of small importance, for man himself is of small importance.

The difficulty of reconciling the liberty of our actions with the eternal prescience of God did not embarrass Newton; because he did not engage in the labyrinth.

Liberty once established, it is not for us to determine how God foresees what we freely do. We are ignorant of the manner, in which God actually beholds what is present. We have no idea of the manner in which he sees; how then can we expect to know how he foresees? All his attributes are to us equally incomprehensible.

It must be confessed that objections arise against this idea of liberty, which are very formidable. It is immediately seen that the liberty of indifference would be a very trifling advantage, if it extended no farther than to the turning to the right or left, or chusing odd or even. That which is of consequence is, whether Cartouch and Shah Nadir are at liberty not to shed human blood. It is of small importance that Cartouch and Shah Nadir are at liberty to advance either the right or the left foot. At length it appears that the liberty of indifference is impossible: for how can you determine without reason? you will, but why do you will? Odd or even is proposed to you; you chuse even, but you do not see the motive: your motive is, that even presents itself to your mind at the instant you are about to chuse.

Every thing has its cause, thy will has therefore one. One cannot then will, but in consequence of the last idea which one has received. No one knows what idea he shall have in any moment; no one therefore is master of his ideas, no one therefore is master to will or not to will. If one was master he might do the contrary to what God has constituted in the chain of things in the world. And thus every man might, and in fact would, change every moment the eternal order.

Hence it is that the wise Locke durst not pronounce the name of liberty; free will appeared to him a chimaera. He knew no other liberty than the power to do that which one wills. The gouty man has not liberty to walk, nor the prisoner to go forth. The one is free when he is cured and the other when the prison door is set open.

To exhibit more clearly these perplexing difficulties, I suppose that Cicero would prove to Catiline that he ought not to conspire against his country. Catiline says
to

to him that he is not his own master, that the last conversation he had with Cathegus has imprinted the idea of conspiracy on his mind; that that idea pleases him more than any other: and that one cannot will but in consequence of one's last judgment. But you may, says Cicero, take other ideas with me. Apply your mind to hear me, and to see that it becomes you to be a good citizen. It is not to be done, replies Catiline, your ideas go against me, and the desire of assassinating you prevails. I deplore your phrensy, answers Cicero, endeavour to take my remedies. If I am mad, returns Catiline, I am not master of myself to endeavour after a cure. But, says the consul to him, men have a portion of reason which they may consult, and which affords a remedy for that derangement of organs, by which you are perverted; especially when this derangement is not too violent. Shew me, answers Catiline, the point at which this derangement may be conquered by remedy. For my part I declare that since the first moment in which I applied myself to conspiracy, my thoughts have turned to nothing else. When did you first take this unhappy resolution? interrogated the consul.—When I lost my money at play.—Well, but could not you refrain from play? —No, for on that day the idea of play prevailed over all my other ideas; and if I had not played I had deranged the order of the universe, which required that Quartilla should gain a hundred thousand sesterces of me, that she should get a house, and a lover, and have a son by that lover, that Cathegus and Lentulus should come to me, and that we should conspire against the Republic. Fate has made me a wolf and you the shepherd's dog, and fate will determine which of us must destroy the other. To this Cicero could only answer, *par une Catilinaire*. In reality, it must be allowed, that the arguments against liberty can hardly be answered but by an indeterminate and vague eloquence; unhappy subject, on which the wisest scarce dare allow themselves to think.

One sole reflection consoles us, that whatever system we embrace, or to whatever fatality we believe our actions attached, we always act as if we were free.

CHAP. V.

DOUBTS concerning the LIBERTY of
INDIFFERENCE.

1. **P**LANTS are organised bodies, in which every thing is done necessarily. Some plants approach the animal kingdom, and are in fact, animals, attached or fastened to the earth.

2. The animal plants, which have roots, leaves and sensation, have they liberty? It is not probable.

3. Do not animals possess sensation, instinct, a dawn of reason, a proportion of ideas and of memory? what in reality, is this instinct? Is it not one of those concealed principles, the knowledge of which we shall never arrive at? We can know nothing but by analysis, or by the chain of what is called first principles. Now what analysis or synthesis can make us acquainted with instinct. We only observe that this instinct is necessarily accompanied with ideas. A silk worm has a perception of the leaf which nourishes it, the partridge of the worm which it seeks and swallows up, the fox of the partridge which it eats, and the wolf of the fox which it devours. It is not likely that these beings are possessed of what is called liberty. It is therefore possible to have ideas without possessing liberty.

4. Men receive and combine ideas during sleep. It cannot be said that they are then free. Is not this an additional proof that it is possible to have ideas without being free.

5. Man possesses the gift of a more vast and extensive memory than the beasts. This memory is the only source of thought. Can this memory which is possessed by man and other animals be that from which liberty originates. Can the ideas which are reflected in one brain be absolutely of another nature from the ideas which are not reflected by another brain?

6. Are not men determined by their instinct? and is not this the reason that they never change their distinguishing

tinguishing character? is not this instinct, that which we call the disposition, the turn of mind, or the genius.

7. If man were free would he not often change his natural disposition? but has it ever been known that a man has even given himself a taste? Has it ever been seen, that a man born with an aversion for dancing, has given himself a taste for the dance? or that a sedentary and indolent man has become lively and active? and do not age or regimen diminish those passions which are thought to be subdued by reason.

8. Is not the will the consequence of the ideas last received? These ideas being necessary, is not the will so likewise?

9. Is liberty any thing else but the power of acting or not acting? And had not Locke reason to call liberty power.

10. The wolf perceives some sheep feeding on a plain; his instinct impells him to devour them; but the dogs prevent him. A conqueror perceives a province, which his instinct prompts him to invade; but he finds fortresses and armies which block up the passage. Is there any great difference between the wolf and the prince?

11. Does not the universe appear to be subjected in all its parts to laws which are immutable? If a man could direct his own will at pleasure, is it not clear that it would be in his power to derange these immutable laws?

12 Why should man claim a privilege of exemption from the necessity to which the stars, animals, plants, and all the rest of nature is subjected?

13. Is it just to affirm that in this system of universal fatality rewards and punishments would be useless and absurd? Is it not, rather, evidently in the system of liberty that the inutility and absurdity of rewards and punishments appears? In effect, if a robber on the highway possess a free will, determining solely by itself, the fear of punishment might easily be insufficient to make him renounce his practice of robbing; but if physical causes only be supposed to act; if the prospect
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of power and the torture make a necessary and violent impression, the offender is necessarily reformed by the view of the punishment of another.

14. To know if the mind be free, is it not necessary first to know what the mind is? Can any one boast that his reason alone is able to demonstrate the spirituality and immortality of this mind? Almost all philosophers agree that the place of sensation is that in which all the nerves unite in the brain. But this is not a mathematical point. The origin of each nerve is extended. At this place of origin is a bell or tympanum as it were, which receives the impressions of the organs of our senses. Who will pretend to say that this tympanum possesses no part of space? Are we not automotons born to will always, sometimes to do what we will, and sometimes the contrary? Of the stars, at the centre of the earth without us and within us all substance is unknown to us. We see nothing but appearances. We are in a dream.

15. Whether in this dream we believe the will to be free or in slavery, whether we believe the organized clay of which we are formed is endued with an immortal or perishable faculty; whether we think with Epicurus or Socrates, the wheels on which the machine of the diverse turns will be still the same.

CH A P. VI.

OF NATURAL RELIGION.

Reproach of Leibnitz to Newton. Ill founded. Refutation of an Opinion of Locke. Public Good; Natural Religion. Humanity.

L EIBNITZ in his dispute with Newton charges him with giving too mean ideas of the deity, and destroying natural religion. He pretended that Newton made God corporeal, and that imputation was founded, as we have already seen, upon the use of the word *sensorium*. He added, that the God of Newton had made the world a
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bad piece of mechanism, which would require to be *cleaned*, this is the word Leibnitz used, but Newton had said *manum emendatricem desideraret*. This reproach is founded on Newton's having said, that with time the motions would diminish, the irregularities of the planets would increase and the universe either be destroyed, or be put in order by its Creator.

It is very clear from experience that God has made machines to be destroyed. We are the work of his wisdom, and yet we perish; why should it not be the same with the universe? Leibnitz will have the world perfect; but if God has formed it for the purpose of enduring a limited time, its perfection must then consist in its enduring a limited time, its perfection must then consist in its enduring only till the instant appointed for its dissolution.

As to natural religion, never was man a greater advocate for it than Newton, except it were Leibnitz, his rival in science and in virtue. By natural religion, I understand the principles of morality, which are common to all mankind. Newton it is true, admitted of no innate notions, neither ideas, sensations nor principles. He was persuaded with Locke, that all the ideas are obtained by the senses, in proportion to their development; but he believed, that God having given the same senses to all men, there arises thence among them, the same wants, the same sensations, and the same common notions which are every where the foundation of society. It is clear that God has given to bees and ants something by which they live in common, which he has not given to wolves and falcons; it is also certain, that since men live in society, there must be something in their nature, by which God has been pleased to attach them to each other. Now if, at a certain age the ideas acquired by the senses of men all organized alike, did not by degrees, give them the common principles which are necessary to all society, it is still certain that society could not subsist. Hence the reason why from Siam to Mexico, truth, gratitude, friendship, &c. are in esteem and honour.

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I have always been astonished that the sage Locke at the beginning of his essay concerning the human understanding, in refuting so well the doctrine of innate ideas should pretend that there is no notion of good and evil which is common to all men. I think he is fallen into an error. He grounds his opinion on the relations of travellers, who say, that in certain countries it is a custom to eat their children, and also the mothers when they become past child bearing; that in others they honor the name of certain saints or enthusiasts who substitute asses in the place of women; but ought not a man like Locke to have suspected these relations? Nothing is more common among travellers than to see imperfectly, to relate erroneously what they see, to take, every where in a nation whose language they know not, the abuse of a law for the law itself; and on the whole to judge of the manners of a whole people by a particular fact, of which they knew not all the circumstances.

Suppose a Persian were to arrive at Lisbon, Madrid or Goa, on the day of an *Outo-da-Fe* he might believe, and not without the appearance of reason, that the christians sacrificed men to their God; let him read the almanacks which are sold to the vulgar throughout all Europe, and he will think that we believe in all the effects which are ascribed to the moon, whereas, so far from that, we laugh at them. And thus every traveller who tells me that savages eat their parents out of piety must give me leave to answer, that in the first place the fact itself is very dubious: secondly, that if it be true, far from destroying the idea of that respect which is due to our parents, it is probably a barbarous method of shewing tenderness and regard, a horrible abuse of the law of nature; for, apparently they may not kill their parents but through a notion of duty, either to deliver them from the evils of old age or the rage of an enemy; and if after that they entomb them in the entrails of their children instead of suffering them to be eaten by their enemies, this custom shocking as it is to the imagination, arises necessarily from goodness of heart. Natural religion is nothing else than this law, which is known

known throughout the universe "do as you would be done by". Now the savage who kills his father to save him from the enemy, and who buries him in his bowels lest he should be entombed in those of the enemy, wishes that his own son may treat him in the same manner in a parallel case. This law of treating one's neighbour as one's self naturally proceeds from notions even the least refined and is known sooner or later to all men; for all having the same reason, the fruits of this tree must sooner or later resemble each other, and in reality they do resemble each other, in that which in every society is called virtue and is thought to tend to the good of the public.

Let there be found a society of ten people on the earth, in which that which is useful to the common good is not valued and esteemed, and I will then grant that a natural law does not exist. This rule varies infinitely without doubt; but what conclusion follows from thence provided it does but exist? Matter every where receives different forms, but it everywhere retains its nature. It is needless to say that at Lacedemon theft was commanded; that is no more than the abuse of terms. That which we call theft, was not commanded at Lacedemon; but in a city where every thing was in common, the permission to take with ingenuity, that which individuals had appropriated to themselves contrary to law, was the means of punishing the spirit of appropriation, which was forbid among that people. *Meum & tuum* was a crime of which that which we call theft was the punishment; and with them and with us there was a rule for which God has made us as he has the ants to live together.

Newton thought then that this disposition which we have to live together, is the foundation of the law of nature.

There is besides, in man, a disposition to compassion, as generally extended as our other instincts. Newton cultivated the sentiment of humanity and extended it even to brutes; he was strongly convinced with Locke that God has given to animals (which seem to be nothing
else

else than matter) a measure of ideas and the same sensations as us. He could not believe that God, who has made nothing in vain, had given to beasts the organs of sensation to the end that they might not be possessed of sensation.

He perceived a horrid contradiction in believing that beasts have sensation and yet making them suffer. His morality in this respect, agreed with his philosophy. He did not yield but with reluctance, to the barbarous customs we have of nourishing ourselves with the blood and flesh of beings like ourselves, and which we every day care for; and he never suffered them to be killed in his house by slow and studied deaths, in order to make them more delicious.

This compassion which was extended even to beasts, appeared in the liveliest charity towards men. In effect, without humanity, that virtue which comprehends all the rest, it is impossible to merit the name of a philosopher.

C H A P. VII.

Of the SOUL; and of the manner in which it is united to the BODY and obtains its IDEAS.

Four Opinions concerning the formation of Ideas. Those of the Ancient Materialists. That of Mallebranche. That of Leibnitz. The opinion of Leibnitz opposed.

NEWTON was persuaded like almost all good philosophers that the soul is a substance not to be comprehended; and many persons who have lived much with Locke, have assured me that Newton avowed it to Locke, that our knowledge of nature is insufficient to enable us to pronounce that it is impossible for God to add the gift of thought to any extended being whatsoever. The grand difficulty is rather to conceive how any being can think, than to determine how matter can become possessed of thought. Thought, it is true, seems to have nothing in common with the attributes which we know

know of that extended being which we call body, but are we as yet acquainted with all the properties of body? It appears very rash to say to God, you have been able to give motion, gravity, vegetation, life to a being, but you are not able to give it thought.

Do they reason well who say, that if matter could receive the gift of thought, the soul would not be immortal? It is more difficult for God to preserve than to create. Besides, if an indivisible atom endure for ever, why should not the gift of thought it has received endure together with it? If I mistake not, they who deny God the power of joining ideas to matter, are obliged to say, that that which we call spirit, is a being whose essence it is to think, to the exclusion of all extended being. Now if it be the essential nature of spirit to think, it must think necessarily and always, in like manner as a triangle has necessarily and always three angles, independant of the deity. What! If God creates a being which is not matter, is it then necessary that that being must think? weak and rash that we are! How can we determine that God has not formed millions of beings which have neither the properties of spirit or matter which are known to us; we are in the situation of a herdsman, who having never seen any animals but oxen should say, *if God create animals it is necessary that they should have horns, and chew the cud, or ruminate.* Let us then determine that which is most respectful to the deity, neither to affirm that there are beings which independant of him possess the divine gift of thought, nor to suspect that God cannot give this attribute to that being which he deigns to chuse. We may perceive from this alone how unreasonable those are who wished to charge Locke with this opinion as a crime, and by a cruel malignity to oppose with the arms of religion an idea in itself purely philosophical.

As for the rest, Newton was far from hazarding a definition of the soul as many others have not scrupled to do; he thought it possible that millions of other substances possessed of thought, might exist and be of natures totally different from that of our soul. Whence
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the division which some have made of all nature into body and spirit, appeared the definition of a blind and deaf person who in defining the senses never suspected the hearing or the sight. What foundation, in reality, have we to conclude that God has not filled the immense space with an infinity of substances which have nothing in common with us.

Newton framed no system to explain the manner in which the soul is united to the body, and how ideas are formed. An enemy to systems he judged of nothing but by analysis; and when that light failed him he knew where to stop.

There has been four opinions concerning the formation of ideas; the first is that of almost all ancient nations, who imagining nothing else to exist but matter, compared the ideas in the mind to the impression of a seal on wax. This opinion was rather the effect of a rude instinct than of argument. Those philosophers who have since attempted to prove that matter thinks of itself have erred much more considerably; for the vulgar deceive themselves without reasoning, but they err by principle, for none of them have been able to discover any thing in matter that shews it to have thought by itself. Locke appears to be the only person who has removed the contradiction between matter and thought, by recurring to the Creator of all matter and all thought and saying modestly: *He to whom all is possible, could not be cause a material being to think, as an atom or element of matter?* Like a wise man he went no further than the possibility. It seems the height of temerity to affirm that matter thinks, because it is in the power of God to communicate to it the property of thought; but is it less rash to affirm the contrary?

The second and most common opinion is that which establishing the soul and body as two beings which have nothing in common, affirms nevertheless, that God has created them to act mutually upon each other. The only proof of this action is the experience which every one thinks he has. We find that our body sometimes obeys the will and sometimes commands it; we imagine
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that they act on each other really, because we perceive it, and it is not possible to carry the enquiry farther. To this system an objection is made which seems not to admit of a reply; it is that if an exterior object, for example, communicate a vibration to the nerves, this motion either passes to our soul or it does not; if it does pass it must communicate motion to it, which supposes the soul to be corporeal; and if it does not pass, there can be no action. All that can be answered is that this action is among the number of things, whose mechanism must be for ever unknown. A sad conclusion! but almost the only that is in the power of man in more than one point of metaphysics.

The third system is that of occasional causes by Descartes, carried still farther by Mallebranche. He begins by supposing that the soul cannot have any influence on the body, and by that he makes a great advance; for it does not follow that the influence of the soul upon the body is impossible because it cannot be conceived; he next supposes that matter, as an occasional cause, makes an impression upon our body, and that then God produces an idea in our soul, that reciprocally the man produces an act of will and God acts immediately on the body in consequence of that will; so that the man neither thinks nor acts but in God; which cannot in my apprehension be explained clearly but by saying that God alone acts and thinks for us. This hypothesis is loaded with difficulties; for how in this system can a man will of himself and yet not think of himself? If God has not given us the faculty of producing motion and ideas, if it be he only who acts and thinks it is he only that wills. We not only cease to be free, but we cease to exist, or rather we are modifications of God himself. In this case there is no longer a soul, an intelligence in man and the trouble of explaining the union of soul and body becomes needless, since it exists not and God alone exists.

The fourth opinion is that of the pre-established harmony of Leibnitz. According to his hypothesis the soul has no connection with the body. They are two

clocks which God hath made, each of which has its spring or first mover, and they go a certain time in a perfect correspondence; the one shews the hours and the other strikes. The clock which shews the hours shews them, not because the other sounds, but God has established their motions in such a manner that the hand and the bell continually agree. Thus the soul of Virgil produced the *Æneid* and his hand wrote the *Æneid*, without the hand obeying at all the intention of the author. But God had so regulated it that the soul of Virgil should make verses, and that a hand attached to the body of Virgil should at the same time write them down. Not to mention the extreme embarrassment to reconcile liberty with this pre-established harmony; there is a strong objection may be made, which is, that if according to Leibnitz nothing can be done without a sufficient reason taken from the nature of things, what reason had God to unite together two incommensurable beings, two beings so heterogeneous and so infinitely different as the soul and body, and which, in no respect influence each other? My soul might, to as good purpose, be placed in Saturn as in my body. The union of soul and body is here a thing intirely superfluous; but the rest of the system of Leibnitz is much more extraordinary. The leading parts of it may be seen in the *Supplement aux actes des Leipzig*, Vol. VII; and the large commentaries which many Germans have made on it in a geometrical method, may also be consulted.

According to Leibnitz there are four sorts of simple beings, which he calls Monades, as will be shewn at Chap. IX. We speak here of that species of Monade only which is called *our soul*. The soul, says he, is a concentration, a living mirror of all the universe, which has in itself all the confused ideas of all the modifications of this world present, past and future. Newton, Locke and Clarke, when they first heard of such an opinion shewed as great a contempt for it as if Leibnitz had not been the author; but as very great German philosophers have been proud to explain what no Englishman ever thought worth his attention, I am obliged to explain

plain with perspicuity this hypothesis of the famous Leibnitz; an hypothesis so much the more respectable in that you have made it one of the objects of your enquiry.

Every simple, created being, says he, is subject to change, otherwise it would be God. The soul is a simple created being and cannot therefore remain in the same state; but bodies, being composed, cannot make any alteration in a simple being; it is therefore necessary that its mutations should originate from its proper nature. Its mutations are there successive ideas of the things of the universe; some of these ideas are clear; but all the things of this universe are so dependant on each other, so interwoven or connected without end, that if the mind have a clear idea of one of these things, it has necessarily confused and obscure ideas of all the rest. One might, to render this opinion clearer, adduce the example of a man who has a clear idea of a play or game; he has at the same time many confused ideas of possible combinations in the game. A man who has actually a clear idea of a triangle, has an idea of many properties of the triangle, which in their turn can present themselves more clearly to his mind. In this sense it is that the Monade of man is a living mirror of this universe.

It is easy to answer to this hypothesis, that if God has made the soul a mirror, it is a very tarnished one, and that, if no other reasons can be adduced in support of suppositions so strange than the dependance or connection which is affirmed to be indispensable in all the things of the world, this edifice so confidently erected stands upon a foundation that can hardly be perceived; for when we have a clear idea of a triangle, it is because we are acquainted with the essential properties of a triangle; and if the ideas of all these properties do not immediately offer themselves to the mind, they are nevertheless included in this clear idea, because they have a necessary agreement with each other. But is the whole assemblage of the universe in this situation? If you take away one property of a triangle you destroy or take away the

whole ; but if you take a grain of sand from the universe, will all the rest be changed ? if of an hundred millions of beings following each other two and two, the two first mutually change place are all the others necessarily changed ? Will they not preserve the same mutual relations among each other ? Besides, have the ideas of a man the same chain or connection which is supposed in the things of this world ? What connection, what necessary medium is there between the idea of the night and the unknown objects which I behold on waking ? What connection is there between the temporary death of the soul in a profound sleep or in a swoon, and the ideas which present themselves on recovering one's spirits.

Every being in the universe belongs to or is a part of the universe without doubt, but every act of every being is not the cause of events in the world. The mother of Brutus in bringing him forth was one of the causes of the death of Cæsar ; but whether she spit towards the right or the left was an event of no importance to Rome. There are events which are effect and cause at the same time. There are a thousand actions which are only effects without any consequence following. The sails of a windmill grind corn which nourishes man ; here a consequence follows ; the same sails fan away a small quantity of dust, by which no effect is produced. A stone cast into the Baltic sea produces no effect in the Indian ocean. There are a thousand effects which vanish like the motions in fluids.

Supposing it even possible that God had done all that Leibnitz imagines, ought we to believe it on the ground of a simple possibility ? What has he proved by all these new attempts ? that he has a great genius ; but has he enlightened either himself or others ? Strange ! we are ignorant of the manner in which the earth produces a blade of grass, how a woman produces an infant, yet think we know how ideas are produced !

If it be demanded what Newton thought of the soul and its operations, and which of all these opinions he followed ? I answer none. What then did the man
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who subjected infinity to calculation, who discovered the laws of gravitation, what did he know of this subject? — He knew how to suspend his judgment.

C H A P. VIII.

Of the first PRINCIPLES of MATTER.

Examination of the first Matter. Mistake of Newton. There are no real Transmutations. Newton admits of Atoms.

IT is not our present business to enquire which system was the most ridiculous; that which made water the first principle of things, that which attributed all to fire, or that which supposes cubes placed one upon the other without any interval and moving, I know not how, among themselves.

The system which has ever been the most plausible is, that there is a first matter indifferent to every thing, uniform and capable of all the forms which by different combinations constitute the universe. The elements of this matter are the same, and it is modified according to the different moulds through which it passes; as metal in fusion becomes sometimes an urn or sometimes a statue. This was the opinion of Descartes, and it agrees very well with the chimera of his three elements. Newton's opinion in this point relating to matter, coincided with that of Descartes; but he arrived at that conclusion by another method. As he scarce ever formed an opinion but on the foundation either of mathematical demonstration or of experiment, he thought he had experience on his side in this instance. The illustrious Robert Boyle had long kept water exposed to an equal degree of heat in a retort; the chymist who worked with him believed that the water was at length changed into earth. But the fact was false, as has since been proved by Boerhaave, whose eminence in natural philosophy is equal to his skill in medicine; he shews,

that the water evaporated, and that the earth which appeared in its place came from without.

How diffident ought we to be of experiment, since Boyle and Newton have been deceived! These great philosophers made no difficulty of believing, that because the primitive parts of water were changed into primitive parts of earth, the elements of things are nothing else but the same matter differently arranged. If a deceitful experiment had not led Newton to this conclusion, I presume he must have reasoned quite otherwise. I must beg that the following may be read with attention:

The only method by which it becomes man to search into or reason upon objects is that of analysis. To depart immediately from the first principles of things to the things themselves is the property of God alone; and if, without blasphemy, we may compare the Deity to an architect, and the universe to an edifice, who is that traveller, who seeing the outside only of a building, will dare immediately to imagine and describe its interior construction? And yet this is what almost all philosophers have not scrupled to do with a thousand times the temerity. Let us then examine this edifice as much as is in our power: what is it that we find without us? Animals, vegetables, minerals, under which I comprehend all the salts, sulphurs, &c. mud, sand, water, fire, air, and nothing else at least hitherto.

Before we examine whether bodies are mixed or not, I must ask myself if it be possible that this matter, which is presumed to be uniform, which in itself in no respect is like the various things we behold, should nevertheless produce that variety.

I. What is this first matter, which is nothing like the things of the world and yet produces them all? It is a thing of which I can have no idea, and which therefore I ought not to admit of. It is true that I can form a conception in my mind of an extended substance, impenetrable and figurable, without determining my thoughts either to sand, or mud, or gold, &c. but this matter must notwithstanding be some one of these, or else nothing

thing at all. In the same manner I can think of a triangle in general without fixing on an equilateral, scalene, or isosceles, &c. triangle; yet a triangle, if it exist, must be one of those. This idea alone, well considered, is, perhaps, sufficient to overthrow the opinion of a first matter.

II. If any matter put into motion sufficed to produce what we see on the earth, there would be no reason why dust, well shaken in a cask, should not produce men and trees, nor why a plain, sowed with corn, should not produce whales and crawfish instead of corn. It is in vain to say, that the moulds and husks which contain the seed should prevent it; for we may then recur to the question, why are these moulds, these husks so invariably determinate? Now if no art can cause fish to spring up in a field instead of corn, nor medlars instead of a lamb in the belly of an ewe, nor roses on the boughs of an oak, nor soals in a hive of bees, &c. If all the different species are each invariably the same, ought I not to believe with some reason, that these species were so determined by the master of the universe? that there are as many different designs as species, and that from matter and motion nothing could arise but an eternal chaos without these designs.

Every thing that passes confirms me in this opinion. If I examine on one hand a man and a silk worm, and on the other a bird and a fish, I am convinced that they were originally formed at the beginning of things; I observe in them nothing but a development. That of the man and that of the insect have certain agreements and certain differences; that of the fish and that of the bird have other agreements and differences; we are in the worm-state before we are received into the womb of our mother; we become chrysalides and nymphæ in the uterus, when we are enveloped in those membranes which some term the caul; we come forth with arms and legs, as the worm, becoming a butterfly, emerges from its tomb with legs and wings; we live some days like the worm, and our body afterwards expands in a similar manner. Among reptiles some
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are oviparous and some are viviparous; among fish the female is fruitful without the male, who impregnates the eggs after they are laid by passing over them. Grubs and oysters, &c. produce their young like themselves, and without mixture of sexes. The polypus is endued with a principle by which its head will grow again after it is cut off, and lobster's claws are renewed in like manner. Vegetables and minerals are formed in a manner totally different. Every kind of being is itself a world apart, and so far from matter and casual or blind motion producing every thing, it is very probable that God has formed an infinite number of beings with powers or properties infinitely varying, for he himself is infinite.

This is what I suspect from the general consideration of nature. But if I enter into detail and make particular experiment with things, this is the result: I behold compounded bodies, as vegetables and animals, which I decompose, and thence obtain certain gross elements, spirit, phlegm, sulphur, salt, and *caput mortuum*, or earth. I behold other bodies, as metals and minerals, from which I can never obtain but their proper parts more attenuated: gold has never produced any other substance but gold, and from mercury nothing else can be obtained but mercury. Sand, pure clay, or pure water cannot be changed into beings of another nature. What ought I to conclude from hence, except that vegetables and animals are composed of these other primitive and uncompounded beings? These primitive and unalterable beings are the elements of bodies; the man and the fly are composed of the mineral parts of mud, sand, fire, air, water, sulphur, salt, and all these primitive and undecomposable parts are the elements, of which every one has its proper and invariable nature.

To obtain an assurance of the contrary, it is necessary to have seen some transmutations; but what transmutation has chymistry ever discovered? Is not the philosopher's stone regarded as impossible by all wise men? And is it more possible in the present state of the world that salt should be changed into sulphur, water into earth,

earth, or air into fire, than to make gold with the powder of projection?

When men have believed in transmutations, properly so called, have they not been deceived by the appearance, like those who think the sun moves? For upon seeing corn and water converted in the human body into flesh and blood, who has not believed transmutations possible? Yet is all this any thing more than the different arrangements of the salts, sulphurs, earths, &c. in the corn and in our bodies? The more I reflect, the more a metamorphosis, strictly taken, appears to be a contradiction in terms. For in order to the changing of the primitive parts of salt into primitive parts of gold, two things are, I conceive, necessary, to annihilate the parts or elements of the salt, and to create those of the gold; this, in reality, is the pretended metamorphosis of an uniform matter, hitherto admitted by so many philosophers; and here follows my proof:

It is impossible to conceive the immutability of the species of things, unless they be composed of unchangeable principles. In order that these first principles or constituent parts should not change, it is necessary that they should be perfectly solid, and consequently always of the same figure; if they be such they cannot become other elements, for to that effect a change of figure would be requisite, which is impossible in the present state of the universe. The element which serves to make or constitute salt cannot become the element of mercury. I do not know how Newton, who admitted of atoms, should fail to make so natural a conclusion. He allowed of true atoms or indivisible bodies, as did Gassendi; but he arrived at this assertion by his mathematics; at the same time he believed these atoms, these indivisible elements, changed continually into one another. Newton was but man, and fallible like ourselves.*

* The greatest part of all this prolix and diffuse augmentation is founded on a mistake of our author. Newton did not hold, that indivisible atoms were mutable, as M. de Voltaire affirms he did; but that the constituent particles of bodies which are composed of these atoms may
be

It will doubtless be asked here, how the germs of things, being hard and indivisible, can grow and extend themselves; it is probable they do not increase but by assemblage and contiguity; many atoms of water form a drop, and so of the rest.

It remains to be known how this contiguity operates, how the parts of bodies are bound together. This is, perhaps, one of the secrets of the Creator into which men can never penetrate. For to know in what manner the parts which constitute gold are formed into a mass, it seems necessary to see the parts.

If it were to be allowed to say, that attraction is probably the cause of this adhesion and continuity of matter, there is nothing that can be advanced with greater appearance of truth; for in reality, if it be demonstrated, as we see it is, that all the parts of matter mutually gravitate to each other, can any thing more natural be thought on than that bodies, which touch each other in the greatest number of points, are the most strongly united by the force of this gravitation? But this is no place to enter into the physical detail of the effects of gravity.

C H A P. IX.

Of the NATURE of the ELEMENTS of MATTER or of MONADES.

The Opinion of Newton. The Opinion of Leibnitz.

IF there was ever reason to say *audax japei genus*, it is in the enquiry which men have dared to make concerning these first elements, which seem to be placed infinitely beyond the sphere of our knowledge. Perhaps there may be no opinion more modest than that of Newton, who goes no farther than to think, that the ele-

be changed, by mutation of figure and not metamorphosis of substance; which is a doctrine I never remember to have seen, except in the present work. Vide Newton's Optics *sub fine*. N.

ments

ments of matter are matter; that is to say, beings extended and impenetrable, into the intimate nature of which the understanding is unable to penetrate; that God can divide it to infinity as he also can annihilate it: but that nevertheless he does not, but preserves its parts extended and infecable, that they may serve for the base of all the productions of the universe.

On the other hand there is not, perhaps, an instance of greater rashness than the flight which Leibnitz has taken from the ground of his principle of the sufficient reason, to penetrate, if possible, into the bosom of causes and the inexplicable nature of these elements. Every body, says he, is composed of parts which are extended, but of what are these extended parts composed? They are actually, continues he, divisible and divided to infinity; you will then never find but extension. Now to say that extension is the sufficient reason of extension, is to reason in a circle, or to say, in fact, nothing; the reason of the cause of extended beings must then be found in beings which are not extended, in simple beings or monades. Matter then is nothing but an assemblage of simple beings. It has been shewn at the chapter of the soul, that, according to Leibnitz, every simple being is subject to change; but its mutations, or the successive determinations which it receives, cannot come from without, by reason that the being is simple, intangible, and occupying no part of space; the source of the changes it undergoes, on account of external objects, must be in itself; it has, therefore, ideas. But it has a necessary connexion with all the parts of the universe; it has, therefore, ideas which relate to the whole universe. The elements of the vilest excrement have then an infinite number of ideas. Their ideas, it is true, are not very clear; they have not *apperception*, as Leibnitz says; they have not in themselves the intimate attestation of their thoughts; but they have confused *perceptions* of past, present, and future. He admits four species of monades: I. The elements of matter which have no clear thought or idea. II. The monades of beasts, which have some clear ideas, but none distinct. III. The

III. The monades of finite spirits, which have confused, clear, and distinct ideas. IV. Lastly, the monade of God, which has none but adequate ideas.

I have already observed, that the English philosophers, who do not respect names, answered the whole of this by the smile of derision: but it is not permitted me to refute Leibnitz but by argument and reason. I think I may take the liberty to say to those who have admitted these opinions, All the world allows, with you, the principle of sufficient reason; but is it a fair consequence which you deduce from that principle? I. You admit matter actually divisible to infinity; the least part must then be impossible to come at. There is no point which has not sides, which does not occupy a part of space, or which has not a specific figure; how, then, can you affirm, that it is composed of beings without figure, without place, and without sides? Do not you offend the grand principle of *contradiction*, by endeavouring to follow that of *sufficient reason*?

II. Is it reasonable that a compound body should not, in the least, resemble that of which it is composed? What, do I say not resemble? There is infinity between a simple and a compounded being: and you affirm that the one is composed of the other. He who should say that the elements of iron will form gold, and that the constituent part of sugar will form coloquintida, would he say a thing more contrary to reason?

III. Can you with truth advance, that a drop of urine is an infinity of monades, and that each monade possesses ideas, though obscure, of the whole universe? and that because, according to you, every place is full, because in this plenum every thing is connected, and a monade necessarily possessing ideas, it cannot have a perception that is not related to every thing which is in the world.

These are the doctrines which are thought to be explained by lemmas, theorems, and corollaries. What has been proved by all this?—That which Cicero said, That there is nothing so strange which has not been maintained

tained by the philosophers. O metaphysics! we are as far advanced as we were in the time of the first Druids!

C H A P. X.

Of active FORCE, which puts every Thing in Motion in the Universe.

Whether there be always the same Quantity of Force in the World. Examination of Force. The Method of computing Force. Conclusion of two Parties.

I Suppose, without argument, that it is granted that matter cannot obtain motion of itself; it must therefore receive it from without; but it cannot receive it from other matter, as that would involve a contradiction; it is necessary, then, that a cause which is not matter should produce this motion. God is this immaterial cause: and here we must be careful to distinguish that the vulgar axiom, that we are not to recur to God in philosophy, is not good but in effects which ought to be explained from next precedent physical causes. For example, I propose to explain why a weight of four pounds is equipoised by a weight of one pound; if I say that God so appointed it, my answer is that of an ignorant person; but I satisfy the question if I say, that it is because the weight of one pound is four times as distant from the fulcrum, or point of support, as the weight of one pound. It is not the same with the first principles of things; it is then the act of an ignorant person not to recur to God; for there either is no God, or there are no first principles but in God.

It is he who has impressed on the planets the force by which they move from west to east; it is he who has caused these planets and the sun to revolve on their axes. He hath impressed a law on all bodies, by which they all tend equally to the center. Lastly, he has formed animals, to which he has given an active force, with which they can generate or produce motion.

The

The grand question is to know, if this force given by God for the production of motion is always the same in nature ?

Descartes, without mentioning force, advanced without any proof, that the quantity of motion is always equal ; and his opinion was so much the more without foundation, as the laws of motion were absolutely unknown to him, Leibnitz, in a more enlightened age, was obliged to own with Newton, that a part of motion is or may be lost, but he pretends that though the same quantity of motion do not exist, the force remains always the same. Newton, on the contrary, was persuaded that it implies contradiction, that motion should not be proportional to the force.

Before we enter upon any mechanical discussion of the subject, it is necessary to pay attention to the nature of things : for here the metaphysician must conduct the geometrician. A man is possessed of a certain quantity of active force ; but where was this force before his birth ? If it be said that it was in the *germen* of the infant, what force can that be which cannot be brought into action ? And when he is become man is he not free to act or not ? Cannot he employ a greater or less quantity of force ? Let us suppose him to exert a force of three hundred pounds to give motion to a machine ; and suppose, as is possible, that this force is employed in depressing a lever, and that the machine attached to this lever is in the exhausted recipient ; the machine can easily acquire a force equal to two thousand pounds. The operation being made, the arm withdrawn, the lever detached, and the weight immoveable, I demand, whether the small quantity of matter which was in the recipient has received from the machine the force of two thousand pounds ? Does it not appear from these considerations that active force is continually generated and lost in nature ?

To terminate this metaphysical dispute, let us now attend to Newton and experience. Motion, says he, is generated and lost : but on account of the tenacity of fluids and the want of elasticity in solids, much more motion is lost than is restored in nature. This being

granted, if we consider this indubitable axiom, that the effect is always proportional to the cause; it is evident that where motion is diminished, force is likewise necessarily diminished. It is necessary, then, in order to preserve the same quantity of force in the universe, that this principle, *the cause is proportional to the effect*, should cease to be true.

It has been thought, that in order to preserve this always equal force in the world, no more was required than to change the usual method of estimating that force. Instead, therefore, of measuring the quantity of motion in a body, as Mersennus, Descartes, Newton, Mariotte, Varignon, &c. have always done after Archimedes, by multiplying the mass by the velocity; the Leibnitz, the Bernouillis, the Hermans, the Polenis, the s'Gravesandes, the Vols, &c. have multiplied the mass by the square of the velocity.

This controversy, which is a scandal to geometry, has divided Europe into parties; but at length it seems to be agreed, that in reality it is no more than a dispute about words. It is impossible that these great philosophers, though diametrically opposite, should all be deceived in their calculations. They are equally just; the mechanical effects answer equally to either method of computing. There must, then, undoubtedly, be a sense in which they are both right. Now this point in which they agree, and which ought to reunite them is the following, first shewn by Dr. Clarke, though rather in a harsh manner.

If the time in which a mover acts be considered, its force at the end of the time is as the square of its velocity multiplied by its mass. For what reason? because the space passed through by the mass is as the square of the time in which it is passed through. Now the time is as the velocity: and therefore the body which has passed through this space in this time, acts at the end of the time by a force which is as its mass multiplied by the square of its velocity; thus, when the mass 2 in two times (for example minutes) passes through a space with 2 degrees of velocity, at the end of that time the force is two multiplied by the square of the velocity
2 equal

2 equal to 8; and the body makes an impression which is as 8. In this case the Leibnitzians are not wrong.

But the Cartesians and Newtonians united have great reason on their side, when they consider the thing in another light; for they say: in an equal time, a body of four pounds, with one degree of velocity, acts precisely the same as a weight of one pound with four degrees of velocity: and elastic bodies, which meet together, always rebound in the inverse ratio of their velocity and mass; that is, a double ball with a velocity as one, and a single ball with a velocity as 2, projected against each other, will arrive in an equal time and will rebound to equal heights; now we are not to consider what will happen to moveable bodies in equal but unequal terms; which not being attended to has given rise to this misunderstanding. The new method of computing forces is true in one sense but false in another; it therefore only serves to complex and embarrass simple notions, and consequently the old rule ought to be adhered to. What may be concluded from these two methods of examining things? That the world ought to agree that the effect is always proportional to the cause; and consequently that if the motion be lost in the universe, the force which causes it is also lost. Thus have I enumerated the opinions of Newton on the greater part of questions which relate to metaphysics; and leave the determination between him and Leibnitz to your judgment.

I proceed to explain his discoveries in physics.

PART

P A R T T H E S E C O N D.

C H A P. I.

The first Researches on the Subject of Light, and how it comes to us. The Errors of Descartes on this Subject.

The singular Definition of the Peripatetics. The Spirit of systematizing misled Descartes. His System false. Of the progressive Motion of Light. Error of the Author of the Spectacle de la Nature. Demonstration of the Motion of Light by Romer. Romer's Experiment combated and opposed without Judgment. The Discovery of Romer is confirmed by the Discoveries of Bradley. History of these Discoveries. Explanation and Conclusion.

THE Grecians, and the barbarians wholeart from them to reason and to deceive themselves, have said from age to age that " Light is an accident, and this accident is the act of a transparent body so far forth as transparent; luminous and coloured bodies have qualities which resemble those which they excite in us, for the principal reason, that nothing can impart that which it has not; on the whole, light and colours are a mixture of heat, cold, dryness and moisture; for moisture, dryness, cold and heat being the principles of every thing, it is necessary that colours should be composed of them."

This is the absurd nonsense which the masters of ignorance, paid by the public, have caused the credulity of mankind to respect for so long a series of years: thus it is that the world reasoned on almost every subject till the time of Galileo and Descartes. And even long after their time, this jargon, which disgraces the human understanding,

understanding, has subsisted in many schools. I may venture to affirm that the reason of man thus obscured, is much beneath that confined though sure source of knowledge which we call instinct in brutes. We cannot therefore too much felicitate ourselves that we are born in an age and among a people which begin to see for themselves and to enjoy the principal and greatest appendage of humanity, to wit, reason.

All these pretended philosophers having guessed at hazard behind the veil which covered the face of nature, Descartes came and lifted up a corner of this grand veil. He said, "Light is a subtile and rare matter which is diffused every where, and which strikes our eyes. Colours are the sensations which God excites in us, according to the different motions which carry that matter to our organs." Thus far Descartes was right; he ought either to have stopped here, or to have taken experience for his guide in going farther. But he was desirous of establishing a system. This passion acted on that great man as the passions do in other men, it drew him from his principles.

He had laid it down as the first foundation of philosophy, that nothing ought to be admitted without evidence; and, nevertheless, in contempt of his own proper rule, he imagines these elements formed out of pretended cubes, which he supposes to have been made by the Creator and to have broken themselves by a rotation about their centres when they came out of the hands of God.

Of these pretended broken cubes equally worn on all sides, and at length rounded into globules, he was pleased to form the light which he graciously diffuses over all the universe.

The more ingeniously this system was imagined the more you will perceive that it was unworthy of a philosopher, and since nothing of all this is proved, it were to as much purpose to adopt the system of cold and heat, dryness and moisture. Error for error, what does it signify which prevails?

According

According to Descartes, light comes not from the sun to our eyes; but it is this globose matter diffused every where, which the sun presses on or impels, and which presses or acts on our eyes, as a staff pressed at the one end immediately acts with the other. He was so much persuaded of this system, that in the seventeenth letter of his third volume, he says and positively repeats: "I avow that I know nothing of philosophy, if the light of the sun be not transmitted to our eyes in an instant."

In fact, it must be confessed that, great as his genius was, he knew very little of true philosophy; he wanted that experience which the succeeding age acquired. This age is as much superior to Descartes as Descartes was to antiquity.

I. If light were a fluid always diffused in the air, we should see clearly in the night, because the sun, beneath the hemisphere (or horizon) would always press the light in every direction, and the impression would come to our eyes; light would circulate in the same manner as sound; we should be able to behold an object situate on the other side of a mountain; in short, we should never have a brighter day than during a central eclipse of the sun; for the moon, in passing between us and that star, would press, at least according to Descartes, the globules of light and would only tend to augment their action.

II. The rays which are turned out of their path and forced to take a new direction by means of a prism, demonstrate that light moves in reality and effect, and is not a mass of globules simply pressed. Light takes three different courses in entering (or passing through the surfaces of) a prism; its three directions in the air, in the prism, and at passing out of the prism, are different; and even more, its motion is accelerated within the body of the prism. Is it not therefore a little strange to say that a body that visibly changes its place, (twice) three times, and whose motion is accelerated, is not at all moved? And nevertheless a book has appeared, in which the progressive motion of light is rashly called an absurdity.

III. If light were a mass of globules, a fluid existing in the air and in every place, a small perforation in a darkened chamber ought to illuminate the whole; for the light, pushed onwards in every direction thro' this small perforation, ought to act in the same manner as small globes of ivory ranged in a round or square figure, which are all dispersed if one of them be strongly pressed: but the contrary to this is what happens; the light received by a small orifice which admits the passage only of a slender cone of rays, scarcely enlightens to the distance of more than half a foot from the place where it strikes or falls.

IV. It is known that light which is emitted from the sun to us passes in about eight minutes that vast space which a cannon ball, preserving its first velocity, would not accomplish in five and twenty years.

The author of the *Spectacle de la Nature*, a very valuable work, is here fallen into an error, which may mislead beginners, for whom his work is calculated. He says that light arrives from the stars in seven minutes, according to Newton; he has taken the stars for the sun. Light arrives from the nearest fixed stars in about six months, according to a calculation founded on observations of a very nice and dubious kind. It is not Newton, but Huygens and Hartsoecker who made this supposition. He says likewise, to prove that God created light before the sun; that light is diffused thro' all nature, and that it becomes sensible when the luminary stars push or press it; but it is demonstrated that it arrives from the fixed stars in a time considerably long: now if it make this passage it was not before diffused. It is proper to be guarded against these errors which are every day repeated in books which are but the echo of each other.

Here follows in short the substance of the sensible demonstration which Romer made use of to shew that light is above seven or eight minutes in its passage from the sun to the earth.

Fig. 1. From the earth at C is observed that satellite of Jupiter which is eclipsed regularly once in forty-two hours and a half. If the earth were immovable the observer

server at C in thirty times forty hours and a half would behold thirty emerfions of the fatellite; but at the end of this time the earth is found in D, and the observer no longer fees this emerfion precisely at the expiration of thirty times forty hours and a half; but muft add the time which light takes in moving from C to D, which time is very confiderable. But this fpace CD is yet lefs than the fpace GH in the circle. Now this circle is the great orbit of the earth; the fun is in the middle; light in coming from the fatellite of Jupiter paffes over CD in ten minutes and over GH in fifteen or fixteen minutes. The fun is (about the half diftance) between G and H, and therefore the light comes from the fun in feven or eight minutes.

This curious obfervation was long contefted; but at length the world was forced to admit of the fact, but prejudice has endeavoured to elude the confequence. It proves no more, fay they, than that the matter of light exifting in fpace and contiguous from the fun to our eyes, takes feven or eight minutes to transmit the impreffion of the fun to us; but ought they not to fee that fuch an answer made at a venture, manifefly contradicts every principle of mechanics? Descartes knew well, and has affirmed, that if the matter of light were like a long pole preffed by the fun at one end, the impreffion muft be communicated in an inftant at the other end. Therefore if a fatellite of Jupiter preffed a fupposed luminous matter, confidered as a ftiff thread of globules extended to our eyes, we fhould not behold the emerfion of the fatellite at the expiration of fome minutes but at the inftant of the emerfion itfelf. If as the laft fubterfuge it be faid that the luminous matter ought not to be regarded as a ftiff body, but as a fluid, it induces an error unworthy of any natural philofopher, fince an ignorance of the action of fluids muft be fupposed; for a fluid would act in every direction, and there would never be, as has been faid, either night or eclipse. Motion in this fluid would befides be very flow, and ages, inftead of eight minutes, would be required to give us the perception of the light of the fun.

The discovery of Romer proves then incontestably the propagation and progression of light. If the old prejudice should still revolt against a truth so established, it must yield to the new discoveries of Mr. Bradley, which confirm it in a most admirable manner. The observations of Bradley are perhaps the greatest attempts that have ever been made in astronomy.

It is known that the space of one hundred and ninety millions of our leagues, which at least the earth runs thro' in a year, make but a point with respect to the distance of the fixed stars from the earth. The sight cannot distinguish whether a star has changed its apparent situation when viewed from opposite ends of the diameter of this immense orbit. It is nevertheless very certain that after six months there is between us and a star situate near the pole (of the ecliptic) about sixty-six millions of leagues difference; and this space which a cannon ball would not pass over in fifty years preserving its utmost swiftness, is lost and disappears at the prodigious distance of our globe from the nearest fixed star. For when the angle of sight becomes of a certain minuteness, it is no longer measurable but vanishes.

To find the secret of measuring this angle, to obtain the difference between the apparent situations of the earth in cancer and capricorn, and by this means to discover what is called the parallax of the earth, appeared a problem no less difficult than the invention of the longitude. The famous Hooke, so well known for his Micrography, attempted the solution of this problem; he was followed by Flamsteed, who had settled the positions and formed a catalogue of three thousand stars; next the chevalier (the honorable Samuel) Molineux, with the assistance of the celebrated mechanic Graham, invented a machine for making the requisite observations, in which neither pains, time, nor expence were spared; lastly, Dr. Bradley put the finishing hand to this great work.

The instrument made use of was called the parallactic telescope. A description of it may be seen in Smith's excellent Treatise on Optics. A long telescope suspended perpendicular

perpendicular to the horizon was so disposed, that its axis of vision could easily be directed along the plain of the meridian either a small distance to the north or the south, and by means of an index applied to a graduated arc the quantity of the angular distance from the zenith could be known to the utmost exactness. Many stars were observed with this instrument and among the rest one of the stars (γ bayero) in the constellation, Draco was observed during the course of a whole year.

What result ought to be expected from this laborious research? Certainly, if the earth from the beginning of summer to the beginning of winter do change its place, if it be removed these sixty six millions of leagues, the ray of light which at the beginning of the six months coincided with the axis of the telescope will at the end of the time be on one side of it; the tube must then be removed or altered in position in order to admit the ray; and the quantity of this motion may be exactly known by the graduated arc and index, and by an infallible consequence how much the star is more to the north or south than it was six months before.

These admirable operations were began the 3d of December 1725. The earth then approached the winter solstice, it appeared probable that if the star had any perceptible aberration it would appear to deflect the direction of its ray more to the north, as the earth after the winter solstice went to the southward. But on the 17th of December the star appeared to be advanced in the meridian towards the south. The observers (Molyneux and Bradley) were surprised, as it was precisely contrary to what they had expected; but by a constant attention to these observations, more was obtained than their most sanguine hopes had aspired to. The parallax of this fixed star, the annual motion of the earth and the progression of light were demonstrated to sense.

If the earth revolve in its orbit about the sun, and the motion of light were instantaneous, it is plain that the star observed ought to appear always to go to the northward as the earth is carried in the contrary direction; but if light be propagated from this star, if it
require

require a certain time to come to us, this time must be compared with the velocity of the earth's motion and a calculation thence instituted. Whence it is shewn that the velocity of the light of the star is ten thousand two hundred times as swift as the mean motion of the earth. By observations on other stars it appears that light not only moves with this prodigious velocity, but that it moves always uniformly, though it come from stars, (probably) situated at very different distances. It is said that the light of each star moves in the same time through the space determined by Romer, that is to say, about thirty three millions of leagues in about eight minutes. By the annual parallax it appears that the distance of the star observed in Draco is four hundred thousand times as great as that of the sun from the earth.

In the interim, I intreat every attentive reader who regards truth to consider, that if the light arrives to us from the sun by an uniform motion in eight months, it must arrive from the star of Draco in about six years and one month; and that if the less fixed stars be six times as far removed from us as their magnitudes seem to indicate, their light will be six and thirty years and a half in coming to us. Now the course of these rays is always uniform: let it be judged then if this uniform course can be reconciled with the supposition of an universally diffused matter: let the reader ask himself whether this matter would not in some degree derange this uniform progression of the rays; and lastly, when he reads the chapter of vortices, let him reflect on this prodigious extended space through which the light has freely passed for all ages; then let him judge if this agrees with the doctrine of an absolute plenum, and behold what a mass of error is necessarily connected with the system of Descartes. He made no experiments; without examining, he made use of his imagination to create a world. On the contrary, Newton, Romer, Bradley, &c. depended on fact and observation, and did not form an opinion without that basis.

All these truths are now admitted; they were all opposed in 1738, when the author first published these

Elements

Elements of the Philosophy of Newton, in France. In this manner it is that truth is received by those who have been brought up in error.

CHAP. II.

The System of Mallebranche not less erroneous than that of Descartes. The Nature of Light; its Directions; its Velocity.

Error of Father Mallebranche. Definition of the Matter of Light. Fire and Light are the same Being. Swiftneſs of Light. Minuteness of its Particles. Progreſſion of Light. Proof that a Plenum is impossible. Wilful Opposition to these Truths. Abuse of the Holy Scripture in Opposition to these Truths.

FATHER Mallebranche, who in examining the errors of the senses, was not himself exempted from those which arise from the subtlety of genius, adopted without proof the three elements of Descartes, but he changed many things in that enchanted castle, and making still fewer experiments than Descartes, he made like him, a system.

The vibrations of a luminous body, according to him, impress their strokes or impulses on small moving vortices capable of compression, and all composed of the subtle matter. But if it had been demanded of Mallebranche, how these small vortices transmitted the light to our eyes? How the action of the sun could pass in an instant through such a number of small bodies compressed by each other, and of which a very small number would suffice to deaden and destroy this action? How these vortices in motion and in contact with each other did not mix and compound together? Whence is their elasticity derived? And in short, for what reason does he suppose them to exist at all? Upon these questions being put, what answer could he have made? Or what foundation could he have discovered for his imaginary edifice? Strange that
men,

men, who in their discourse make it a rule to adhere to strict truth, should, in their writings, act as if no such principle existed !

What then is the matter of light? *It is fire itself*; which burns (objects situate) at a small distance, when its parts are less rarified more swift or more united, and enlightens without offending our eyes when it acts from a greater distance, when its parts are more rare less rapid and less united. A lighted taper would burn an eye placed at the distance of a few lines from it, but only enlightens the eye placed at the distance of some inches; and in like manner the rays of the sun, spread through the space of the atmosphere, illuminate objects, but re-united in the focus of a burning mirror melt lead and gold.

If it be demanded what is fire? I answer, it is an element, which I know only by its effect; and must say here as in many other places, that man is not made to know the intimate nature of things, but can only calculate, measure, weigh and make experiments.

Fire does not always give light, neither does light always burn; but it is the element of fire that alone possesses the property of giving light and burning. Fire which is not developed, whether it be in a bar of iron or of wood cannot emit rays from the surface of this wood or iron, consequently it cannot become luminous, which only happens when the surface is ignited.

The rays of the full moon give no sensible heat in the focus of a burning glass, though they give a very considerable light. The reason is palpable. The degrees of heat are always in the proportion of the density of the rays. Now it is proved that the sun, at a like altitude, casts ninety thousand times more rays on the plane of the horizon than the moon. Therefore in order that the rays of the moon in the focus of a burning glass may give only as much heat as the solar rays would produce on a surface equal to that of the glass, it is necessary that the focus should contain ninety thousand times more rays than in this case it does.

They

They who would make fire and light two distinct beings, have therefore deceived themselves by proceeding on the ground that all fire does not shine and all light does not heat; which is as much as to alledge that every being that can serve two purposes is two beings.

This fire is darted forth from the luminous point in every direction; which is the cause that it is perceived on all sides; we must therefore, with geometricians, always consider it as a number of lines proceeding from the centre to the circumference. Thus every fascis, every collection, every beam of rays coming from the sun, or from any fire, ought to be considered as a cone whose base is the pupil of the eye and whose vertex is the radiant point.

This fire is projected from the sun to the earth, to Saturn, &c. with a rapidity which astonishes the imagination. By calculation it is shewn that, if the sun be distant from us twenty four thousand semidiameters of the earth, light in passing from the sun to the earth runs through a thousand million of feet in round numbers in a second. Now a ball of a pound thrown by the force of half a pound of gunpowder passes through no more than six hundred feet in a second, the velocity of a ray of light is then in round numbers sixteen hundred and sixty six thousand six hundred times greater than that of a cannon ball; whence it follows, that if a particle of light were no more in mass than the sixteen hundred thousandth part of a pound, it would produce the same effect as a cannon ball; and if the particles were not many millions of millions yet smaller, a single moment's emanation of light would be sufficient to destroy all vegetation on the face of the earth. Of what an inconceivable minuteness must those particles then be since they even enter our eyes without hurting us.

The sun which projects this luminous matter to us in seven or eight minutes, and the stars, those other suns from which it arrives after a course of many years, supply it for ever without appearing to exhaust themselves, much in the same manner as musk continually emits odorous particles without sensibly diminishing in weight.

In

In short, the rapidity with which the sun projects its rays is probably in proportion to its bulk, which exceeds that of the earth about a million times, and to the velocity with which this immense body revolves on its axis; that is to say, in about twenty five days and a half.

By the way we may observe from the celerity with which this substance of the sun flies off in right lines, how inadmissible the plenum of Descartes is. For, I. How can (a body moving in) a right line come to us through so many millions of beds of matter moving in curves, and across so many and so various motions? II. How could a body so minute pass in *seven or eight minutes over the space of four hundred times thirty three millions of leagues from a star to us, if it had to penetrate through a resisting matter in that space? It would be necessary in that case that every ray should remove or derange in a moment (or rather in its passage) thirty three million of leagues of the subtle matter, four hundred thousand times.

It is to be remarked likewise, that this pretended subtle matter in an absolute plenum must resist as much as the most solid matter, and therefore a ray of light from a star would have a greater effect to make than would be necessary to pierce a cone of gold whose axis was in length one hundred and thirty two thousand millions of leagues.

Yet more experience, the true instructor in philosophy, informs us that light in passing from one element to another, from one medium into another medium, does not all pass through as we shall explain; great part is reflected. Even the air reflects more than it transmits; therefore (in the case of a plenum) it would be impossible for any light to arrive to us from the stars, it would be all absorbed or reflected back before it could pass through the half of our atmosphere: and how much

* Our author has here fallen into the precise error which he took some pains in the last chapter to detect in the *Speſtacle de la Nature*. It is not from the *Stars*, but from the *Sun* that light arrive in seven or eight minutes, as he juſtly obſerves in that place. N.

more would this impediment affect the passing of the light when a space equal to such an immense number of atmospheres must be traversed? But when we come to explain the principles of gravitation, we shall find a great number of arguments which prove that this pretended plenum is no more than a creature of the imagination.

Let us stop here a moment to observe how slowly truth establishes itself among men. It is near fifty years since Romer demonstrated, by observations on the eclipses of Jupiter's moons, that light emanates from the sun to the earth in about seven minutes and a half; nevertheless the contrary is maintained not only in many philosophical books written since that time; but the following is quoted from a collection in three volumes, extracted from the observations of all the academies in Europe, printed in 1730. Page 35. vol. I. *Quelques-uns ont prétendu, &c.* "Some have pretended that a continual emission of an infinity of insensibly small particles is made from a luminous body, as the sun, which carry the light to our eyes; but this opinion which seems to be a relict of the old philosophy cannot be maintained." Yet this opinion is demonstrated by more than one method: and is so far from being related to the old philosophy that it is directly the contrary; for what can be more contrary to words, void of meaning, than such an assemblage of measures, computations and experiments?

There is another set of opposers who have attacked this truth, concerning the emanation and progression of light, with the same arms with which men more respected than enlightened formerly dared to attack with so much haughtiness and vanity the opinion of Galileo concerning the motion of the earth.

They who combat reason by authority, employ the holy scripture, whose purpose is to teach us to live well, to extract their lessons of philosophy from them. Pluche has really made Moses a natural philosopher; if thro' simplicity he is to be deplored; and if by this palpable

palpable artifice he thinks to render those odious who are not of his opinion, he is still more to be pitied.

The ignorant ought to remember that those who condemned Galileo on a similar pretext have covered their country with a disgrace which the name of Galileo alone can counterpoise. We ought to believe say they, that the light of the day does not come from the sun, because according to the book of Genesis God created the light before the sun.

But these gentlemen do not recollect that according to the book of Genesis God separated the light from the darkness, and called the light day and the darkness night, and composed a day of evening and morning, &c. and all this before the creation of the sun. It follows then, according to these philosophers, that the sun is not the cause of day nor his absence the cause of night.

They add likewise, that God separated the waters from the waters and by this separation they understand the sea and the clouds. But according to them the vapors that formed the clouds were not then as now raised by the sun. For, according to the book of Genesis, the sun was not created till after this separation of the inferior and superior waters; but they avow that it is the sun which raises the superior waters and are therefore in contradiction with themselves. Will they deny the motion of the earth because Joshua commanded the sun to stand still? Will they deny the developement of seeds in the earth because it is said that grain must rot before it sprout forth? They ought then to allow, with all men of sense, that we are not to look in the Bible for physical truths, and that we may thence learn to become better men, but not to understand natural philosophy.

C H A P. III.

The Reflexibility of Light was not well understood (before the Time of Newton ;) Light is not reflected from the solid Parts of Bodies as has been thought.

There is no Body which is perfectly Plane or Polite. Light not reflected by the solid Parts of Bodies. Decisive Experiments. How and in what sense Light is reflected from a Vacuum. The manner of making the Experiment. Inference from this Experiment. The smaller the Pores the greater Quantity of Light is transmitted. Ill-founded Objections against these Truths.

HAVING explained what light is, whence it comes to us and how and in what time it arrives to us, let us now attend to such of its properties as were undiscovered till the present age. The chief of its properties is that it seems to rebound from the solid surface of all objects to bring their images to our eyes.

All men, all philosophers, the Descartes, the Mallebranches and those who were farthest removed from the vulgar mode of apprehension, have alike believed that the surfaces of bodies do really strike back or reflect the light to us. The more plane and solid any surface is, say they, the more it causes the light to rebound; the more any body has of large and right lined pores the more it transmits the rays thro' its substance. Thus the polished mirror, covered at the back with quicksilver returns all the rays to us; but the same glass not quicksilvered, having large and right lined pores, suffers a great part of the rays to pass thro' its substance. The more, the larger, and the more direct the pores of any body are, the more transparent it is; such, say they, is the diamond, and such is water itself. These are the notions (once) generally received and which no one pretended to call in question. Nevertheless all these
notions

notions are entirely false; the most probable positions being thus often the farthest removed from truth. Philosophers in this circumstance have erred in the same manner as the vulgar, depending on the sense, think the sun is no larger than it appears to the eye. This error of the philolophers may be detected by an attention to what follows.

There is no body whose surface we can render truly plane and even: yet many surfaces appear to us to be regular and of an exquisite polish. Whence does it happen that that which is not even and polished should nevertheless appear so? The most regular surface is not with respect to the particles of light, different from a collection of mountains, cavities and intervals, in the same manner as the point of the finest needle is rough, in consequence of asperities and inequalities which are discoverable by the microscope. Every cone or pencil of rays which falls on these irregularities would be scattered according to the various position of the parts of the surface; reflection then could never be regular and we should never be able to see our image in a glass. Moreover, it is probable that glass has a thousand times more pores than matter; yet every point of the surface reflects the rays, and of course it follows that they are not reflected by the (solid parts of the) glass.

The light which brings our image to us from the surface of a mirror does not then come from the solid parts of the mirror; neither does it come from the solid parts of the mercury and tin adhering to the posterior surface of the glass. These parts are not more plane and even than those of the glass itself. The solid parts of the tin and mercury are incomparably greater than the solid parts which constitute light; therefore if the small particles of light were to incide on these gross partices of the mercury they would be scattered about on all sides like small leaden shot falling among rubbish. What unknown power is it then that makes the light rebound to us with so much regularity? It has already been shewn that it is not the bodies themselves. That which seemed to be the best known and most incontestable

table part of philosophy becomes a mystery greater than was formerly the weight of the air. Let us examine this problem of nature, and our astonishment will be redoubled. It is impossible to follow this research without surprize and admiration.

In a darkened chamber expose the glass AB (fig. 2.) to the rays of the sun, so that the rays on their arrival at the surface B may make an angle of more than forty degrees with the perpendicular P. The greatest part of the rays will not then pass thro' into the air, but will intirely return back into the glass at the instant of their emerfion; returning as you see by an insensibly small curve.

It certainly cannot be the solid surface of the air that has reflected them back into the glass; many of these rays passed into the air before when they incided less obliquely; why then comes it to pass that at an obliquity of forty degrees nineteen minutes, the greater part no longer pass thro'? Do they find a greater resistance or more solid matter in the air, than in the glass thro' which they have just passed? Do they find more solid parts in the air when they fall with the obliquity of forty degrees and one-third, than when their obliquity is only forty? The air is nearly two thousand four hundred times more rare, less heavy and less solid than the glass; the rays ought therefore to pass thro' the air with two thousand four hundred times the ease with which they penetrated the crystal. Nevertheless, in spite of this prodigious appearance of facility they are reflected; they are here reflected by a force, which is of two thousand four hundred times more efficacy than the air; and therefore not by the air. Which is another proof that the rays are not reflected to our eyes by the solid parts of bodies. Light is so far from being reflected by impinging on the solid parts of bodies, that it sometimes is reflected even from a vucuum; which is a fact that deserves particular attention.

You have seen that light falling with an angle of forty degrees nineteen minutes (on the ulterior surface of) a crystal glass rebounds almost entirely from the air which

it meets at the ulterior surface; that if the light fall in an angle one minute less (greater) there passes still less thro' this surface into the air.

Newton affirmed, that if the air were taken away from the ulterior surface of this glass there would then no more rays pass thro' (at the before-mentioned angle of emergence) and that all the light would be reflected. I have made the experiment. I procured an excellent prism, to be set in a plate of copper, and applied this plate to the top of an open receiver which was placed on the table of an air pump. This whole apparatus I caused to be carried into my darkened chamber. There receiving the light thro' a perforation, on the prism, and causing it to fall with the proper angle, I pumped the air out for a long time; they who were present saw in the proportion as the air was exhausted, there passed less light into the receiver, till at length there passed scarce any at all. It was an agreeable sight to behold this light totally reflected by the prism to the ceiling.

The experiment demonstrates then that the light in this instance rebounds from the void; yet it is well known that a void can have no action. What then are we to conclude from this experiment? Two things very palpably. The first, that the solid parts of the surface of bodies do not reflect the light; and the second, that there is an unknown power in bodies which acts upon light; this second property we shall examine in its place.

Our present business is only to prove that light is not reflected from the solid parts of bodies. Here follows another confirmation of this truth. Every opaque body when reduced into a thin plate suffers rays of a certain kind to pass thro' its substance and reflects others; now if light were driven back by the bodies themselves, all the rays which fell in like circumstances on the thin plate would be alike reflected. In short, we see that never was such an astonishing paradox demonstrated by a greater variety of methods. Let us now begin to make ourselves familiar with these truths.

I. This

I. This light which is thought to be reflected by the solid surface of bodies, rebounds, in reality, without having touched the surface.

II. Light is not returned from the posterior surface of a mirror by the quicksilver, but is reflected from the very middle of the pores of the glass and of the quicksilver.

III. It is not necessary, as hath hitherto been thought, that the pores of the quicksilver should be very small in order to reflect the light, but on the contrary, it is necessary that they should be large.

This will afford a subject of new surprise to those who have not studied this philosophy, that the secret to render a body opaque is frequently to enlarge its pores, and that the means of rendering it transparent is to make the pores smaller. The order of nature seems in appearance to be entirely changed. That which seems calculated to produce opacity, is precisely that which causes transparency; and that which appears proper to cause transparency, is that which renders bodies opaque. Yet nothing is more true and it may be shewn by the most common experiments. Dry paper, whose pores are large, is opaque, no ray of light passes thro' it: contract these pores by moistening it with water or oil, and it becomes transparent: the same happens to linen, salt, &c.

It is proper to inform the public, that a person who has lately written against these truths with much more arrogance and contempt than knowledge, has attempted to rally Newton upon these discoveries. "If the secret to render a body transparent, says he, be to contract its pores, it will be proper to make windows of less dimensions, in order to have more light in a room, &c." I answer, that it is very indecent in one who is talking of philosophy to pretend to be witty; that to turn Newton into ridicule is an enterprize that requires no common strength, and moreover that this pitiful joker may recollect that large openings from which the light is intercepted do not transmit the light, and that a thin body pierced with an infinity of holes, exposed to

the sun, admits a great quantity of light. Paper moistened, and wet linen, for example, are thin bodies whose pores are contracted and rectified by the oil or the water, and the light passes through these pores thus rendered strait; but it will not pass through the largest sieves which cross each other and intercept the rays. It is very proper to be sure of the right side before we attempt to be witty.

The contemptible arguments, and the contemptible witticisms which have been made in France against the admirable discoveries of Newton, would be a disgrace to the nation, if the persons who made them had not been the reproach of philosophy. Let us return, and conclude on the whole, that there are unknown principles which perform these wonders, which cause the light to rebound before it touches a surface, which return it from the pores of a transparent body, and which retract it even from the vacuum. Whatever may be the cause, we are invincibly compelled to admit the facts.

C H A P. IV.

Of Mirrors, of Telescopes: of the Reasons which the Mathematics afford for explaining the Mysteries of Vision; that these Reasons are insufficient.

The plain Mirror. The convex Mirror. The concave Mirror. Geometrical Explanations of Vision. No immediate Agreement between the Rules of Optics and our Sensations. The Proof.

THE rays, which a power unknown till the present age, causes to rebound from the surface of a mirror to your eyes, without touching this surface, and even from the pores themselves; these rays, I say, return to your eyes with the same property as they arrived at the mirror. If you contemplate your own countenance, the parallel rays emanating from your countenance and falling perpendicularly on the mirror, return
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in the same manner as a ball which rebounds perpendicularly from the floor.

If in the mirror *m*, (fig. 3.) you observe an object situate to the one side of you as *A*, the same thing will happen to the rays which are emitted from *A* as would happen to a ball which rebounds to the eye at *E*. This is what is meant by saying, that the angle of incidence is equal to the angle of reflection. The line *AC* is the line of incidence, and the line *CE* is the line of reflection. It is sufficiently known, and the bare mention shews that these lines form equal angles at the surface of the glass; but yet why do I behold the object neither at *A* where it really is, nor at *C* from whence the rays last came, but at *D* behind the mirror itself?

Geometry will inform you (fig. 4.) that it is because the angle of incidence is equal to the angle of reflection, your eye at *B* refers to the object in *D*; that is, because objects cannot act upon you but in right lines, and the right line continued from your eye as far as *D* behind the mirror, is as long as *AC* and *CB* taken together. And yet farther it will inform you that, you never see objects but at the point from whence the rays begin to diverge. Let *mi* represent the mirror. The pencils of rays which emanate from each point of the object began to diverge at the instant of their emission; they arrive at the surface of the mirror, where every ray incides, is dispersed and reflected towards the eye. The eye refers them to the points *DD* at the termination or point at which these rays (continued behind the mirror would) meet; but in reference to the points *DD* these rays do the same thing as at the points *AA*: that is, they begin to diverge; and therefore you see the object *AA* at the points *DD*.

These angles and these lines serve doubtless to give intelligence concerning this artifice of nature, but they are far from discovering the efficient physical reason why your mind without hesitation refers the object to the same distance behind the mirror, as it is really situate before it. These lines represent what happens, but they do not indicate for what purpose it happens.

If you wish to know how it is that a convex mirror diminishes objects, and a concave mirror augments them, these lines of incidence and reflection afford you a reason of the same nature.

You are informed that the cones of rays which diverge from the points AA and fall on the convex mirror, make the angles of incidence equal to the angles of reflection whose lines pass to your eye (fig. 5.) Now these angles are less than if they had fallen on a plane surface; therefore if they be supposed to pass to B they will converge much sooner; therefore the object in BB would be less. Now your eye refers the object to BB the points whence the rays would begin to diverge; the object ought therefore to appear to you smaller, as in the figure. For the same reason that it appears smaller it appears also nearer, because the points BB at which the rays would terminate are nearer the mirror than the points AA.

By the reason of contraries, you ought to behold objects more enlarged and more distant in a concave mirror, placing the object sufficiently near (fig. 6.) For the cones of rays AA at their points of emergence, and diverging from the mirror if they were supposed to be reflected (in the direct contrary course) through the mirror, would not reunite but in BB, as you see in the figure. Now BB is greater and more distant from the mirror than AA; you then behold the object larger and more distant.

This in general is what passes in rays reflected to your eyes; and this single principle that the angle of incidence is always equal to the angle of reflection is the ground work of all the mysteries of catoptrics.

But it is necessary to be informed how lenses augment these magnitudes and diminish these distances; and lastly, why objects delineating themselves inverted in your eyes, you nevertheless behold them as they really are.

As to magnitudes and distances, this is what the mathematics teach you; the greater the angle which an object forms in your eye the larger the object appears: nothing can be more simple. The line HK which you see at the distance of an hundred paces, traces an angle in the eye A (fig. 7.) at two hundred paces distance, it

it traces an angle of only half the magnitude in the line B (fig. 8.) Now the angle which is formed on your retina, or of which your retina is the base, is similar to the angle of which the object is the base. For they are vertical angles and therefore by the first propositions of the elements of geometry are equal: therefore if the angle formed in the eye A, be double the angle formed in the eye B, the object ought to appear as large again to the eye A as to the eye B.

But in order that an eye situate in B, may view the object as much enlarged as it appears to the eye at A, it is necessary to contrive, that the eye B should receive as large an angle as A, which is as near again. The glasses of a telescope produces this effect (fig. 9.) Let us here for the sake of ease make use of but one glass, and by abstraction infer the effect of the combinations of many. The object HK emits its rays to this glass at some distance from which they are reunited. Let us imagine a glass of such a curvature that these rays crossing each other may form an angle at the eye C equal to the angle at A, then the eye, they tell us, judges from that angle. It, therefore, sees the object of the same magnitude as when beheld by the eye at A. But in A it is seen at an hundred paces distance; whence, in C, the eye receiving the same angle views the object likewise at an hundred paces distance. All the effect of combined lenses, and the various kinds of microscopes and telescopes which magnify objects, consists then in causing objects to be viewed under a greater angle. The object AB (fig. 10.) is seen by means of the glass under the angle DCD which is much larger than the angle ACB.

You demand still farther from the rules of optics why you behold objects in their proper situation though they are painted reverse on the retina. The ray which emanates from the head of the man A (fig. 11.) arrives at the lower point of the retina A, and his feet are seen by the rays BB at the superior part of your retina. So that this man is really painted with his head below and feet above on the bottom of your retina. Why then do you not see this man inverted, but erect and as he is?

To resolve this question, it is common to use the comparison

comparison of a blind man, who holds in his hands two sticks across, with which he discovers very well the position of objects. For the point which is to the left being perceived by the right hand by the help of the stick, is judged immediately to be to the left; and the point which his left hand has perceived by the intervention of the other staff he judges to be to the right, without deceiving himself. Therefore every teacher of optics informs us, that the inferior part of the eye immediately refers its sensation to the superior part of the object, and that the superior part of the retina as naturally refers the sensation to the inferior part; so that the object is seen in its natural position.

But when you are perfectly acquainted with all these mathematical lines and angles, by which the passage of the light is traced to the bottom of the eye, you are not to suppose that you are informed of the manner in which you perceive the magnitudes, distances and situations of things. The geometrical proportions of these lines and angles are just, it must be granted, but there is no more agreement between them and our sensations, than between the sound we hear and the magnitude, distance and situation of the sounding body. My ear is struck by a sound; I hear that sound and perceive nothing farther. In the sense of sight my eye is affected; I behold colours and perceive nothing more. And the proportions of these lines and angles are not only incapable of being at all the immediate cause of the judgment I form of objects, but in many cases those proportions do not agree at all with the manner in which we behold objects. For example, a man seen at four and at eight paces distance appears of the same magnitude. Nevertheless the image of this man at four paces is nearly double in your eye to what it is when seen at eight paces. The angles are different, yet the object is always seen equally large; it is therefore evident from this instance, chosen out of many others that these angles and these lines are not at all the immediate cause of the manner in which we see.

Before we continue, then, the research which we have began concerning light and the mechanical laws of
nature

nature, you command me to explain how the ideas of the distances, magnitudes, and situations of objects are received by the mind. This enquiry will afford us something both of novelty and truth, which is the only apology for publishing a book.

C H A P. V.

How we become acquainted with the Distances, Magnitudes, Figures and Situations of Bodies.

Neither optical Lines nor Angles can make us acquainted with Distances. Example in Proof. Those optical Lines do not indicate either the Magnitude or Figure. Example in Proof. By the Experience of one born blind and cured by Cheselden. How we know the Distances and Magnitudes of Objects. Example. We learn to see in the same manner as we learn to read. The Sight cannot make us acquainted with Extension.

LET us begin by speaking of distance. It is clear that it cannot be perceived immediately of itself; for distance is no other than a line drawn from the object to us. This line terminates in a point and we perceive no more than that point; and whether the object exists at the distance of a thousand leagues or one foot, this point is always the same. We have therefore no immediate means of instantly perceiving distance as we have of perceiving by the touch whether a body is hard or soft; by the taste if it be sweet or bitter; by the hearing if of two sounds one is grave and the other acute. For, it must be noted, that, the parts of a body which yield to my finger, are the immediate cause of my sensation of softness; and the vibration of the air, excited by the sonorous body, are the immediate cause of my sensation of sound. Now, if I cannot thus obtain an immediate idea of distance, I must know it by means of some other intermediate idea; but it is necessary at least that I should perceive the idea, for an idea which I have not, cannot certainly serve to produce another in my mind. I am told that a certain house is a mile distant from a certain river; but if
I do

I do not know the situation of the river I certainly cannot know that of the house. A body yields easily to my hand, and I immediately conclude it is soft; another resists, and I immediately perceive its hardness. It is therefore necessary that I should perceive the angles formed in my eye, in order thence to conclude the distance of objects. But the greater part of mankind do not even know that these angles exist: it is therefore evident that these angles cannot be the immediate cause that you are acquainted with the distance of objects.

He who for the first time in his life hears the sound of a cannon or the sound of a concert, cannot judge whether the cannon be discharged or the concert executed at the distance of a league or at thirty paces. Nothing but experience can give him the habit of judging the distance between him and the place from whence the noise proceeds. The vibrations or undulations of the air carry a sound to his ear or rather to his mind; but this noise does not acquaint his mind with the place from whence it proceeded, nor indicate the form of the cannon or instruments of music. It is precisely the same thing with respect to the rays of light which emanate from an object; they do not at all inform us where that object is.

Neither do they more acquaint us with the magnitude and figure. I see a small round tower afar off. I advance; I perceive and touch a large and square building: surely what I see and touch is not that which I saw. The small round object that was in my sight is not this large square building. Therefore with respect to us, the measurable and tangible object is a different thing from the visible object. I hear from my chamber the noise of a carriage. I open the window and see it. I descend and get into it. Now the carriage which I have heard, the carriage which I have seen, and the carriage which I have touched are three objects absolutely different of three of my senses which have no immediate agreement with each other.

Yet more; it is demonstrated, as I have shewn, that an angle is formed in my eyes when I view a man at four feet distance nearly as large again as when I behold the same

same man at the distance of eight feet. Nevertheless I always see this man of the same magnitude. How is it that my perception thus contradicts the mechanism of my organs? The object is really as small again in my eyes, and yet I see it twice as large as this reality. It is in vain to attempt an explanation of this mystery from the place or the form which the crystallin takes in our eyes. Whatever supposition is made, the angle under which I see a man at four feet distance, is always double the angle under which I view him at eight feet. Geometry can never resolve this problem and physiology is equally incapable; for you may easily suppose that the eye assumes a new form, that the crystallin advances and the angle is enlarged; all this makes equally for the object at eight paces as well as for that at four. The proportion will be always the same, if (by any change in the eye) you behold the object at eight paces distance under an angle half as large again, you will also see the object at four paces under an angle enlarged nearly in the same degree. Therefore neither geometry nor physiology can explain this difficulty.

These geometrical lines and angles are no more the real cause that we see objects in their place than that we see them of certain magnitudes and at certain distances. The mind does not consider whether a certain part of the object be painted on the lower part of the eye; neither does it form any reference to lines which it does not perceive. The eye is only depressed in order to view an object which is near the earth and is elevated to view that which is situated above the earth. All this cannot be illustrated and placed beyond controversy but by some person born blind who had received the gift of sight. For if this person on the moment of opening his eyes had had a judgment of distances, magnitudes, and situations, it would have been true, that the optic angles instantaneously formed on his retina, were the immediate causes of his sensations. And thus Dr. Barclay (Berkley,) affirmed after Mr. Locke, but in that respect going beyond him, that neither situation, magnitude, distance nor figure would be at all perceived by this blind person, upon his immediately receiving the sense of sight. But

But where find this blind person, on whom the indubitable decision of this question is to depend? At length, Mr. Cheselden, one of those famous surgeons who join the most skilful address of the hand, to the most enlightened understanding, imagined he could give sight to one born blind by couching that film which is known by the name of a *cataract*, and which he supposed was formed in the eye of his patient about the time of his birth. In consequence of this idea, he proposed the operation; but the blind youth was with difficulty brought to consent. He could not well conceive, that the sense of sight could add much to his pleasure. Except on account of the desire he had to read and write, he had had no wish to see. By this indifference he verified the important truth, that it is impossible to be unhappy by the privation of those benefits or advantages of which one has no idea. However the operation was made and succeeded. This young man, at about the fourteenth year of his age, saw the light for the first time. His experience confirmed all that Locke and Barclay had so well foreseen. For a long time he distinguished neither magnitude, situation nor figure. An object of one inch placed before his eye, and which concealed a house from his view, seemed as large as the house. Every thing he saw seemed to be upon his eyes and to touch them, as the objects of the sense of feeling touch the skin. He could not immediately distinguish that which, by the assistance of his hands, he had judged to be round, from that which he had judged to be angular; nor determine with his eyes whether that which his hands had perceived to be on high or low, were really so or not. He was so far from knowing magnitudes, that after having at length conceived by the view that his house was larger than his chamber, he could not conceive how the sight could give that idea. It was not till the expiration of two months, that he could perceive that paintings re-presented solid bodies. And when after thus long practising with his new sense he had perceived that bodies, and not surfaces alone were depicted on the canvas, he applied his hand, and was

was surprised not to feel those solid bodies whose representations he began to perceive. He demanded to know which was the lying sense, the touch or the sight.

This was then an irrevocable decision, that the manner in which we see things is not at all the immediate consequence of the angles formed in our eyes. For these mathematical angles were then in the eyes of this man, as in ours, and yet answered no purpose without the assistance of experience and the other senses.

How then is it that we represent magnitudes and distances to ourselves? In the same manner that we conceive the passions of men by the colours they impress and the alterations they make in the lines of their countenances. There is no person who does not immediately see grief or anger in the countenance of another. It is the language which nature speaks to all eyes; but it is experience alone that teaches this language. In like manner, it is experience alone that teaches us that when an object is situated too far off, we see it dim and confused. Thence we form ideas which ever after accompany the sense of sight. Thus any man, who at the distance of ten paces has seen his horse of the height of five feet, if he sees the same horse some minutes afterwards of the size of a sheep, instantly concludes, by an involuntary judgment of the mind, that the horse is farther distant.

It is true, that when I see my horse of the size of a sheep, there is formed a smaller image in my eye, the angle of vision being more acute; but this is a concurrent circumstance and not the cause of my perception. Similarly the motion in my brain when I see a man blush with shame, is different from that which arises from seeing him redden with anger; but these different impressions do not at all inform me what passes in the mind of the man without experience which alone makes them understood.

So far from this angle being the immediate cause that I judge a large horse to be very distant when I see it very small; it happens on the contrary, every moment that I see this horse equally large at ten, twenty, thirty,
forty

forty paces, tho' the angle at ten paces may be double; triple or quadruple. I observe afar off, thro' a small hole, a man on the top of the building; the distance and faint light prevent my immediately distinguishing whether or no it be a man: the object appears to me very small, and I take it to be a statue of about two feet in height; the object moves, and I perceive it is a man, and from that instant it appears to be of the ordinary height. Whence do these two so different judgments arise? When I supposed I saw a statue I imagined it to be of the height of two feet, because such was the angle under which I saw it: no experience induced my mind to reject the traits drawn on the retina; but as soon as I judged it to be a man, the connection formed by experience in my mind between the idea of a man and the idea of an height of five or six feet, obliged me to think by a sudden judgment, without reflection, that I saw a man of such an height, and in reality to see a man of that height.

From all this we must absolutely conclude, that distances, magnitudes and situations, are not properly speaking visible things, that is to say, they are not the proper and immediate objects of sight. The proper and immediate object of sight is coloured light; all the rest we perceive only in course of time and by experience: We learn to see precisely as we learn to speak or read. The only difference is, that the art of seeing is more easy, and we all equally have nature for our instructor.

The sudden and almost invariably similar judgments which all our minds at a certain age form of distances, magnitudes and situations induce us to conclude that no more is required than to open the eyes in order to see as we do. But we are deceived, and the assistance of the other senses are necessary. If men had no other sense than the sight, they would have no means of knowing extension in length, breadth and depth, and a pure spirit would perhaps be unacquainted with it unless revealed to it by God. It is very difficult to separate in our minds the extension of an object from the colours

colours of the same object. We never see any thing but extension, and from thence conclude that we see extension. We can scarce make a distinction or separation in our mind between the yellow colour we behold in a *louis d'or*, and the *louis d'or* in which we see the colour! it is like when we hear the word *louis d'or* pronounced we cannot prevent our attaching the idea of the piece of coin to the sound we hear pronounced.

If all men spoke the same language we should be always ready to believe that there was a necessary connexion between the words and the ideas. Now all men have here the same language in the matter of imagination. Nature says to all: when you shall have beheld colours a certain time, your imaginations will alike represent to you the bodies to which these colours seem attached. This prompt and involuntary judgment which you will form will be useful to you thro' the course of your life; for if it were necessary, in order to estimate the distances, magnitudes and situations of the things by which you are surrounded, to wait till you had examined the visual rays and angles, you would be dead before you would know the things you want were ten paces or a hundred millions of leagues from you, or whether they were of the size of a worm or of a mountain. It would be better for you to be born blind.

We are then very wrong when we say our senses deceive us. Each of our senses performs the function for which nature designed it. They mutually assist each other in carrying to our mind by the hand of experience the measure of knowledge which suits our being. We require of our senses that which they were not made to give. We want our eyes to make us acquainted with solidity, magnitude, distance, &c. but it is necessary for that purpose that the touch should agree with the sight, and that both should be seconded by experience. If father Mallebranche had viewed nature on this side he had perhaps attributed fewer errors to the senses which are the only sources of all our ideas.

It is without doubt improper to extend this metaphysical method of considering things to every case and circumstance. We ought not to apply to it for assistance except when the mathematics are insufficient; this is another of the errors of Mallebranche; he attributes, for example, to the sole imagination of men, effects for which the rules of optics give a sufficient reason. He believes that if the stars appear larger at the horizon than the meridian, it depends solely upon the imagination. We shall proceed in the next chapter to explain this phenomenon which for the last century has exercised so many philosophers.

C H A P. VI.

Why the Sun and Moon appear larger at the Horizon, than at the Meridian.

WALLIS was the first who thought that the long interception of land and clouds caused the sun and moon to appear larger at the horizon than at the meridian. Mallebranche fortified this opinion with all the arguments which the sagacity of his genius afforded him; Regis had a famous dispute with him on this phenomenon; he attributed it to the refraction occasioned by the vapors of the earth, and he deceived himself for the vapors of the earth produce the direct contrary effect; but father Mallebranche did not deceive himself, less by maintaining that the imagination struck with the long extent of lands and clouds which reach to the horizon, represents the same star as larger at the extremity of these lands and clouds, than when being arrived at its greatest height it is seen without any such interposition.

The most simple experiments contradict the system of Mallebranche. I had some years ago the curiosity to examine into this phenomenon. I procured tubes of paste-board seven or eight foot long and half a foot in diameter, thro' which I caused the sun to be viewed by many children,

children, whose imaginations were not at all accustomed to judge of the magnitude of the stars by the extension which appeared between the star and the eye. Besides, they saw neither land nor clouds. The tube left them only the view of the sun, and they all saw it much larger than at noon. This and many other experiments, determined me to think of another cause, and I had unfortunately began to form a system, when the mathematical solution of this problem by Mr. Smith fell into my hands and spared me the errors of an hypothesis. Here follows the explanation, which deserves to be well attended to.

It is necessary first, to establish that according to the rules of optics, the sky ought to appear to us like a low vault. A familiar proof of which here follows. Our sight extends distinctly to the point in which objects make an angle in our eye of the eight thousandth part of an inch at least, according to the observations of Hooke.

A man OP (fig. 12.) of the height of five feet contemplates the object AB, also of the height of five feet and distant five and twenty thousand feet; he views it under the angle AOB, but this angle not being the eight thousandth part of an inch, he distinguishes it not, but if he regards the object C, the angle is yet smaller. He sees it as if the object were in AD: so that every thing which is behind C, becomes yet more indistinct; the houses, the clouds which are behind C must appear to touch the horizon towards C; all the clouds then are with respect to us depressed to the horizon at the distance of five and twenty thousand feet; that is to say, at about the distance of a league and two-thirds, the league consisting of three thousand paces, and the depression is made by degrees: consequently all the clouds which are raised at g (fig. 13.) to about three quarters of a league in height, ought to seem to us to touch our horizon. So, that instead of seeing the clouds g g as high as the cloud n, we see the clouds g g touch the earth, and the cloud n elevated about a quarter of a league above our head; therefore we ought not to see

the heavens as a flat cieling, nor as a circular concave, but as a depressed arch whose greatest diameter BB is about six times as long as the small (radius or height) AD.

Therefore we see the heavens in the form BAB, and when the sun or moon are in the horizon B, they appear more remote from us in D by almost a third (or rather three times) than when these stars are in A; now we ought to see them under the angles which come to our eyes from B and A. It remains then to examine these angles (fig. 14). At first thought it seems that they ought to be smaller when the object is more remote and larger when it is nearer; but it is here quite the contrary. The real, tangible star circulates in BDRE, but the apparent star passes thro' the curve BACG. Now the angles are formed by the apparent object. Draw then these angles from the eye in P, to the real places of the star D, (the lines forming) these angles must necessarily touch (and include) the apparent stars: you see, for example, that the angle is of a considerable magnitude at the horizon at E, and that it becomes small enough at C, the difference being yet greater at the meridian. The star at the meridian has (the diameter of) its disc as 3, and at the horizon nearly as 9; for the diameters of the star are as its apparent distances; now the apparent distance of the star is about 9 at the horizon and 3 at the meridian; so likewise is its apparent diameter.

This truth is confirmed by another observation of a like nature. Observe two stars really distant from each other the tenth part of a degree; they will appear to you much farther apart near the horizon, and much nearer together when situate towards the meridian. These two stars which are always equally distant are seen under the angle FCD towards the horizon (fig. 15.) which is much greater than the angle FAB at the meridian. You see that this apparent difference arises from precisely the same reason as I have been explaining.

Here

Here follow the proportions of the apparent magnitudes of the sun and moon according to this rule, and observations that confirm it.

At the horizon these stars are seen of the magnitude	100
At fifteen degrees of altitude	68
At thirty degrees	50
At ninety degrees	30

In like manner two stars whose real distance is invariable will appear at the horizon distant from each other as 100, and at the meridian as 30; which is always, you may observe, nearly as 9 to 3.

This theory is still more confirmed by another observation. The moon appears considerably larger at one time of the year than at another; the sun likewise appears larger in winter than in summer, &c. the difference of this apparent magnitude being more sensible towards the horizon than at the meridian they are more easily remarked. The reason of this increase of magnitude is that at the times when the diameters of the sun and moon appear the largest, these stars are in reality nearest to the earth; the sun is nearer the earth in winter than in summer by about twelve hundred thousand leagues; therefore in winter it appears the larger; but this magnitude of his disc is a little diminished by the refractions of the gross air. The moon in summer is in her perigee; and therefore appears under a greater diameter; and the magnitude of her disc is yet less diminished in summer than in winter, because in summer the air is more rare and subtle.

This phenomenon is then entirely within the compass of geometry and optics: and Dr. Smith possesses the glory of having at length discovered the solution of a problem concerning which the greatest geniuses had formed systems of no use.

* * As the Translator confesses that the above reasoning, tho' offered under a mathematical form, is unintelligible to him, he has been particularly careful to give the literal text. N.

C H A P. VII.

Of the Cause which deflects the Rays of Light, in passing from one Substance to another : That this Cause is a general Law of Nature, unknown before Newton ; that the Inflection of Light is an Effect arising from the same Cause, &c.

What Refraction is. The Proportion of Refractions discovered by Snellius. Sine of Refraction what it is. Grand Discovery of Newton. Light is turned out of its Course before it enters Bodies. Examination of Attraction. Attraction ought to be enquired into before we exclaim against it. Impulse and Attraction are equally certain and unknown. In what respect Attraction is an occult Quality. Proof of Attraction. Inflection of Light in the Vicinity of Bodies that attract it.

WE have already seen the almost incomprehensible artifice by which the reflection of light is performed, and which cannot be caused by impulse as it is already known. That of refraction, concerning which we are about to resume the enquiry, is not less surprising.

Let us begin by confirming ourselves in a proper idea of the thing to be explained. Let us remember that when light falls from a rarer or lighter substance as the air, upon a heavier and more dense substance as water, and which it should seem ought to afford greater resistance to its passage, the light then quits its course and is refracted towards a perpendicular erected (at the point of incidence) on the surface of the water.

To have an accurate idea of this truth (fig. 16.) observe the ray which falls out of the air into crystal. You know how it is refracted. The ray AE makes an angle with the perpendicular BE as it falls on the surface of the crystal. The same ray refracted in the crystal forms
another

another angle with the perpendicular which measures the quantity of the refraction. This incidence and refraction of the light is to be measured. This seems a problem easy to be performed; nevertheless the Arabian geometrician Alhazen, Vitellius, and even Kepler himself failed in the attempt. Snellius Villebrod is the first, according to Huygens, who was an eye witness, who discovered that this proportion was constant in light refracted by any given medium. He made use of secants, Descartes afterwards used sines, which have precisely the same ratio: the theorem being the same but under different names. This proportion is easy to be understood even by those who are totally unacquainted with geometry.

The larger the line AB is, so much in proportion will the line CD be likewise increased? The line AB is that which is called the sine of incidence, and CD is the sine of refraction. The present is no place to explain in general what a sine is. They who have studied geometry know very well, and others may be a little embarrassed to understand the definition. It is enough to know that these two sines, whatever may be their magnitudes, are always in a settled proportion to each other in a given medium (contiguous to a given medium of different refractive density). Now this proportion is different when the refraction is made by a different medium. Light that falls obliquely out of air into crystal is so refracted that the sine of refraction CD is the sine of incidence AB as 2 to 3; by which nothing else is meant than that the line AB is in this case one-third greater in the air than the line CD in the crystal. In water this proportion is as 3 to 4. So that it is evident that in every case and in all possible obliquities of incidence, the refractive force of crystal is to that of water as 9 to 8. The business is not only to know the cause of refraction but of the different refractions which obtain in different mediums. Concerning which all the philosophers have invented hypothesis and have deceived themselves.

At length Newton discovered the true reason so much sought after. His discovery is truly deserving of the attention of all ages. For his discovery not only relates to a particular property of light, though even that would have been a great affair; but we shall see that this property belongs to all the bodies in nature. Consider that the rays of light are in motion, that if they are turned out of their course it ought to be in consequence of some original law, and that nothing ought to happen to light but that which would happen to any body whatsoever of the same minuteness and in like circumstances.

Suppose a ball of lead A (fig. 17.) were thrown obliquely from the air into the water, the direct contrary will happen to what takes place with the particles of light; for the ray of light being rare and thin passes thro' the pores, but the ball whose superficies is large meets with the (solid) surface which resists and sustains it. The ball therefore moves in a direction farther from the perpendicular B, but as soon as it has lost all the oblique motion that was impressed on it, it falls in a line nearly in a perpendicular to the surface, let fall from the point at which it begins to descend. Its force is retarded by the water because the water resists as is well known; but a ray of light on the contrary augments its celerity in the water, because the water does not resist the rays which penetrate it.

There is then a certain force that acts between bodies and light.

We cannot doubt but that this attraction or tendency exists; for we have seen light attracted by the glass re-enter it without impinging on any substance; now this force acts necessarily in the perpendicular as being the shortest course. Since this force exists, it must be in all the parts of the body that exercises it. The parts of the surface of a body must then be acted on by this power before it can penetrate the interior substance, before it can extend to the point to which it is directed. So that (fig. 18.) as soon as the ray is arrived within a minute distance from the superficies of the crystal it begins in this manner, in a small degree, to deflect its course

course towards the perpendicular. It is already, in a small degree, refracted at C before it enters: the more it advances the more it is refracted, because the nearer it approaches the more it is attracted. There is besides another reason of importance why the ray is inflected in an insensible curve before it penetrates the crystal in a right line. This is that, strictly speaking, there is not a precise angle in nature; that a continued motion cannot change its direction, but by passing thro' all the possible degrees of change (of direction between its first course and that afterwards acquired) it is not then possible to pass from one right line into another without forming a small curve that shall join the two lines together. So that the principle of continuity established by Leibnitz and by the attraction of Newton are united in this phenomenon. This (refracted) ray then does not fall in a direction intirely perpendicular nor yet in its first oblique direction as it passes thro' the water or crystal, but follows a line which participates of both and thro' which it descends so much the more swiftly in proportion as the attraction of the water or crystal is more strong. Therefore, so far from the water refracting the light by resisting its course as has been thought, that on the contrary it refracts them because it not only not resists but even attracts it. We ought then to say that the rays are refracted towards the perpendicular, not when they pass from a more resisting medium but when they pass out of a less attracting medium into one that attracts more. Observe that nothing more is to be understood by the word *attracting* than the point to which is directed a force that is well known, an incontestable property of matter which is very sensible between light and other bodies. It is to be considered that since the year 1672 in which Newton discovered and made known this attraction no philosopher has been able to imagine a plausible reason for this refraction of light.

Some tell you that the crystal refracts the rays of light because it resists them; but if it resist how happens it that they enter it with greater facility and swiftness? Others imagine a matter in the crystal which affords more easy passages on every side; but if these passages be so easy in every direction why does not the light enter with-
out

out being deflected. Some have invented atmospheres, and others vortices, but all their systems are defective in some particular; it is therefore proper, I think, to hold with the discoveries of Newton, with this visible attraction, the cause of which neither he nor any other philosopher have been able to explain.

You know that many people, as much attached to the philosophy, or rather the name of Descartes, as formerly they were to that of Aristotle, have set themselves in opposition to attraction. Some have refused to study it; others have despised and insulted it after a very slight examination; but I must beg the reader to make the following reflections:

I. What do we understand by attraction? Nothing else but a force by which one body approaches another, when we neither see or know any other force which impels it.

II. This property of matter is admitted and established by the best philosophers in England, in Germany, in Holland, and even in many universities in Italy, where laws rather strict and rigorous do sometimes bar the access of truth. Ought not the consent of so many learned men to be, at least, a powerful reason for examining whether this force exist or not?

III. It ought to be remembered, that we are as ignorant of the cause of impulse as of attraction. We have no more idea of one of these forces than the other; for there is no person that can conceive why a body has the power of removing another out of its place. Neither do we, in truth, conceive more how one body attracts another, nor how the parts of matter mutually gravitate to each other, as will be proved. So that it is not to be said that Newton boasted he was acquainted with the cause of this attraction. He has simply proved that it exists; he has observed a constant set of phenomena (which denote) an universal property in matter. If a man were to find a new metal in the earth would the existence of this metal be less certain, because its component first principles were unknown?

It is often said that attraction is an occult quality. If by this term is meant a real principle, whose cause is unknown,

unknown, all the universe is in the same state. We neither know how motion exists, how it is communicated, how bodies are elastic, how we think, how we live, nor how nor why any thing exists; every thing is an occult quality. But if the words be intended to stand for an expression of the ancient school, or words without meaning, let it only be considered that it is by the most sublime and the most exact demonstrations that Newton has shewn to mankind this principle which they labour to treat as a chimera.

We have seen that the rays reflected from a mirror could not come to us from its surface. We know by experience, that the rays transmitted into glass with a certain angle of obliquity return back instead of passing through into the air; and if there be a vacuum behind the glass, those rays which before were transmitted return from the void to us. This certainly cannot be an effect of the known impulsion. It is necessary to admit another power; and it must likewise be confessed that there is something in refraction which has not been understood till the present time. Now what is this power which refracts the ray of light in this basin of water? It is demonstrated, as we shall observe in the next chapter, that that which till now has been thought to be a simple ray of light, is a fascis or bundle of many rays which are all differently refracted. If one of these threads of light contained in the ray, be refracted, for example, to four measures from the perpendicular, the other will be refracted to three. It is demonstrated, that the most refrangible, that is, for example, those which being refracted at emerging from the glass and taking a new direction in the air, approach least towards the perpendicular to the glass, are likewise those which are reflected with the greatest readiness and ease. It is then highly probable, that it is the same law (or power) that reflects as well as refracts the light.

In short, if we find another new property of light that appears to owe its origin to the force of attraction, ought we not to conclude that so many (similar) effects do depend on the same cause? Here follows an account
of

of this new property of light which was discovered by father Grimaldi, a Jesuit, about the year 1660; and concerning which Newton has carried the examination so far as even to measure the diameter of a hair at different distances. This property is the inflexion of light. The rays are not only deflected from their course in passing into a medium, by whose mass they are attracted; but other rays which pass in the air near the extremity of this attracting body, approach sensibly towards it, and are evidently turned out of their course.

Place (fig. 19.) in a dark chamber the thin piece of steel or glass which finishes in a point, expose it near a small orifice, through which the light passes, that the light may pass very near the point of the metal: you will then see the rays of light bend in such a manner that the ray which passes nearest the point will be most bent, and those which pass at greater distances will be less bent in proportion. Is it not in the highest degree probable, that the same power which refracts their rays when they pass into the medium, is that which forces them out of their course when they pass near it? Thus refraction, transparence, and reflection are subjected to new laws. We here see an inflexion of light which evidently depends upon attraction. It is, as it were, a new universe that presents itself to the eyes of those who are not averse to seeing.

We shall shew hereafter, that there is an evident attraction between the sun and the planets, a mutual tendency of all bodies towards each other. But we must take notice before hand, that the attraction which causes the planets to gravitate towards the sun, does not act at all in the same manner as the attraction of small bodies in contact. It is even probable that these attractions are of absolutely different natures. These are the new and different properties of light and bodies which Newton has discovered. Our present enquiries do not relate to their cause, but simply to their effects, which have hitherto been unknown. It must not be supposed that light is inflected towards crystal, and in crystal, according to the same law, for example, as Mars is attracted by the Sun.

C H A P.

C H A P. VIII.

Continuation of the Wonders that relate to the Refraction of Light. That a single Ray of (solar) Light contains in itself all the possible Colours. What Refrangibility is. New Discoveries.

The Imagination of Descartes respecting Colours. Error of Mallebranche. Newton's Experiment and Demonstration. The Anatomy of Light. Colours in the primitive Rays. Vain Objections against these Discoveries. Criticisms still vainer. An important Experiment.

IF you enquire of philosophers what it is that produces colours, Descartes will answer you, that "the globules of his elements are determined to revolve on their axes, besides their tendency to motion in right lines; and that it is the different rotations that produce the different colours;" but his elements, his globules, and their rotation, do they ever need the touch of experience to discover their falsity? A multitude of demonstrations overturn and destroy these chimeras.

Mallebranche comes in his turn and says: "It is true that Descartes is deceived: the rotation of his globules cannot be maintained, but it is not the globules of light but little revolving vortices of the subtle matter, capable of compression, which are the cause of colours; and colours, like sound, consist in vibrations arising from pressure." And he adds: "It appears to me impossible to discover by any means the exact law of these vibrations," that is to say of colours. You are to observe, that he spoke thus in the academy of sciences, in 1699, and these proportions were already discovered in 1675; not the proportions of the vibrations of little vortices, which do not exist, but the

the proportions of the refrangibility of rays, which cause colours, as we shall presently observe. The thing which he believed impossible was already demonstrated to the eye, and recognized by the senses; a circumstance that would have been by no means pleasing to father Mallebranche (had he been apprized of it).

Other philosophers, perceiving the weakness of these suppositions, tell you, at least with more probability, that "Colours arise from the greater or less quantity of rays reflected from the coloured bodies. White is that which reflects the most, and black, that which reflects the least. The most brilliant colours are those which emit or reflect the greatest quantity of rays: red, for example, which is rather fatiguing to the sight, must be composed of more rays than green, which rather soothes and gratifies the eye." This hypothesis, already liable to suspicion as being an hypothesis, appears to be no other than a gross error, when we only consider a tablet in a weak light and afterwards in a stronger. For the colours are always the same. White, though enlightened by a single taper, is always white; and green, though enlightened by a thousand, will always continue green.

Last of all address yourself to Newton. He will tell you: Do not trust to me, but to your own eyes and the mathematics: place yourself in a chamber intirely dark, into which the light cannot enter but by an extremely small aperture; the ray of light falling on paper will give you the colour of white. Across, or at right angles to the direction of this ray of light, expose a prism of glass, (fig. 20) then place a sheet of paper opposite the prism, at the distance of about sixteen or seventeen feet. You know that the light is refracted in entering this prism out of the air; you also know that at its emergence from the prism into the air it is again refracted in a contrary manner. If it were not thus refracted it would fall on the floor of the chamber at z . But as the light by refraction is made to diverge from the line Z , this light then proceeds to fall on the paper. There it is that the whole secret of light and

colours is seen. The ray which has fallen on the prism is not, as has been believed, a simple ray; it is a fascis composed of six principal fascies of rays, each of which produces the primitive and primordial colour that is proper to it. From the mixtures of these seven rays are produced all the colours in nature, and the seven reunited together and reflected from any object produce whiteness.

Search deeper into this admirable experiment. We have already hinted that the rays of light are not all equally refracted; what happens in the present circumstance is an evident and ocular demonstration. These seven rays of light emerging from the body of the first ray, which is anatomized at its emission from the prism, are every one placed in their order on the white paper, each ray occupying an oval space. The ray which has the least force to preserve its direction, the least swiftness, the least mass, is carried farthest in the air from the perpendicular to the prism. The rays, whose force, density, and vigour are greater, are carried less out of their first direction. Observe these seven rays, which are refracted so as to fall the one above the other (fig. 21). Each of them paints on the paper the primitive colour which itself possesses. The first ray which separates least from the perpendicular to the prism is the colour of fire or red, the second orange, the third yellow, the fourth green, the fifth blue, the sixth purple, and lastly, that which is thrown farthest from the perpendicular and is above all the rest is the violet. A single fascis of light, which before produced the colour of white, is therefore composed of seven fascies, each of which has its peculiar colour, consequently the assemblage of the seven primordial rays makes white.

If you still doubt, take a lens, which collects the rays of light into its focus. Expose this glass to the hole at which the light enters, and you will see nothing in its focus but a round white spot. Expose the same glass at the place at which it may receive all the seven rays emitted from the prism; it then reunites all the seven rays in its focus, as you see (fig. 22). The colour of these

these seven rays reunited is white : whence it is demonstrated that the colour of all the rays reunited is white. Black is consequently the (colour of the) body which does not reflect the rays of light. For when by the means of the prism you have separated one of these primitive rays, expose it to a mirror, to a burning glass, to another prism, and it will never change its colour nor separate into other rays. To possess in itself a peculiar and one colour is its essence, nothing can alter it farther ; and as a superabundant proof, take threads of silk of different colours ; expose a thread of blue silk, for example, to the red ray and it will become red ; place it in the yellow ray and it will become yellow ; and in like manner of the rest. In short, neither refraction nor reflection, nor any other imaginable means, can change this primitive ray ; like gold that has stood the proof of fire, but yet more unchangeable.

This property of light, this inequality in the refractions of its rays is called by Newton refrangibility ; the fact was immediately disputed and for a long time denied, because Mr. Mariotte had failed in attempting to repeat the experiments of Newton, in France. The objectors rather chose to say that Newton had boasted to have seen that which he never saw, than to think that Mariotte had not taken the proper method to see and that he had not been happy in the choice of the prisms which he made use of. Even at length when the experiments have been well made and the truth shewn to our eyes, prejudice has nevertheless obtained to that degree, that in many journals and books written since 1730 these very experiments are confidently denied, though they are made in the face of all Europe. Thus it was that after the discovery of the circulation of the blood, theses were notwithstanding maintained against the truth, and attempts were even made to render those ridiculous who explained the new discovery, by calling them circulars. In short, when they have been obliged to yield to evidence they nevertheless continued their opposition : the fact being demonstrated to sight, they have caviled at the expression,
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they have revolted against the expression of refrangibility as well as those of attraction and gravitation. Of what importance is the term provided it conveys the truth? When Christopher Columbus discovered the Island Hispaniola might he not call it by what name he pleased? And is it not the right of inventors to name those things which they make or discover? They have exclaimed, they have written against those things which Newton employed with the utmost prudence and caution to prevent mistakes.

He calls the red, yellow, &c. rays, red-making, yellow-making &c. that is, exciting the sensations of red or yellow. He wished by that means to stop the mouths of those who by ignorance or ill-intention might impute to him that he believed with Aristotle that colours were in the things themselves, in the yellow and red rays and not in our mind or perception. He had reason to fear this accusation. I have met with men in other matters respectable, who have assured me that Newton was a peripatetic, that he believed that the rays are really coloured themselves, as it was once believed that fire was hot; but these same critics have assured me that Newton was an Atheist. It is true they never read his book, but they had heard the reports of those who had written against his experiments without having seen them. The mildest thing that has been written against Newton is that his system is an hypothesis; but what is an hypothesis? A supposition. And can that in truth be called by the name of a supposition, which depends on facts so often demonstrated? Is it because one is born in France that he blushes to receive the truth from the hands of an Englishman? The thought would be highly unworthy of a philosopher. It is not in matters of science that the distinction of French and English ought to take place; he who instructs us is our countryman.

Refrangibility and reflection evidently depend on the same cause. That (various) refrangibility which we see attached to refraction ought to have its source in the same principle. The same cause ought to predominate

minate in all these several effects: for such is the order of nature. All vegetables are nourished by the same laws; all animals have the same principle of life. Whatever happens to bodies in motion, the laws of motion are invariably the same. We have already seen that reflection, refraction and the inflexion of light are the effects of a power which is not impulsion, at least as it is known, this same power is observable in refrangibility; these rays which are dispersed to different distances informs us that the medium through which they pass, acts unequally upon them. A fascis of rays is attracted by the glass; but this fascis is composed of unequal masses. These masses are therefore unequally attracted; if this be true, they ought to be reflected from the prism in the same order that they are refracted; the most reflexible ray ought to be the most refrangible.

The prism (fig. 23.) has thrown the seven colours on the paper; turn the prism on its axis in the direction ABC and you will soon obtain the angle, at which all the light will be reflected back instead of passing out of the prism to the paper. As soon as you begin to approach this angle you will observe the violet ray instead of falling on the paper, will be reflected to the ceiling. After the violet come the purple and the blue, and last of all the red leaves the paper and become reflected in its turn to the ceiling. Every ray therefore which is more reflexible is in like manner more refrangible; consequently the same cause produces both reflection and refrangibility.

Now the solid part of the glass is not the cause either of this refrangibility or reflection, whence we have occasion to repeat once more, these properties originate from a cause which is not impulse as it is known on the earth. Nothing can be alledged in contradiction to these experiments; we must of necessity yield to them, however unwilling we may be to admit their evidence.

C H A P. IX.

Of the Rainbow; that this Meteor is a necessary Consequence of the Refrangibility of Light.

The Mechanism of the Rainbow was unknown to antiquity. Ignorance of Albert the Great. The Archbishop Antonio de Dominis is the first who explained the Rainbow. His Experiment. Imitated by Descartes. Refrangibility the only Reason of the Rainbow. Explanation of this Phenomenon. The two Rainbows. This Phenomenon always seen in a Semicircle, (or rather Arc of a Circle.)

THE rainbow or iris is a necessary consequence of the properties of light we have been observing. We nothing in the writings of the Greeks, the Romans nor the Arabians that gives us any reason to conclude that they were acquainted with the cause of this phenomenon. Lucretius says nothing; and from all the absurdities concerning light and vision which he attributes to Epicurus, it appears that his age, though in other respects so polished and refined, was plunged in a deep ignorance with regard to physical matters. It was known that a thick cloud dissolving into rain must be opposed to the sun, and that the eye must be between the luminary and the cloud in order to see that which was called the iris, *mille trahit varios, adverso sole, colores*: but this was all they knew: no one imagined why a cloud produced colours, nor how the nature and order of colours are determined, nor why there are two bows the one above the other, nor why these phenomena are always seen in the form of a semicircle.

Albert, who was named the Great, because he lived in an age in which the size of intellects was very small, imagined that the colours of the rainbow arose from a dew which is between us and the clouds, and that these colours were received on the cloud and thence arrived to us. You are to observe, that this Albert
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the Great believed, with all the school, that light was an accident.

At length the celebrated Antonio de Dominis, archbishop of Spalatro in Dalmatia, chased from his bishoprick by the Inquisition; wrote about the year 1590 his little treatise *De radiis lucis & de Iride*, which was not printed at Venice till twenty years after. He was the first who made it appear that the rays of the sun reflected from the interior surfaces of drops of rain, formed that painting which appears in the rainbow, and which had appeared to be an inexplicable miracle; he rendered the miracle natural or rather he explained it by new prodigies of nature. His discovery was so much the more singular as his notions in other respects concerning vision were very false. He asserts in his book, that the images of objects are in the pupil, and that there is no refraction in the eye; a very singular assertion for a good philosopher! He had discovered the then unknown refractions in the drops of the rainbow, and denied those which are made in the humors of the eye, which had began to be demonstrated: but let us pass by his errors and examine the truth he has discovered.

He observed, with a sagacity very uncommon at that time, that every rank or set of drops of rain that forms the rainbow must return or reflect the rays of light under different angles: he saw that this difference was the occasion of the colours: and he knew how to measure the magnitudes of these angles. He took a globe of glass which he filled with water, and then suspended it at a certain height exposed to the rays of the sun. Descartes, who followed Antonio de Dominis, who corrected and went beyond him in some respects, and who ought to have quoted him, made likewise the same experiment. When this globe is suspended at such a height that the ray of light which proceeds from the sun to the globe makes, with the ray which proceeds from the globe to the eye, an angle of forty two degrees two or three minutes, the globe always emits a red colour. When the globe is suspended a little lower, and these angles become less, the other colours of the

rainbow appear in succession: so that the greatest angle in this case gives the red and the least of forty degrees seventeen minutes produces the violet. This is the basis of the knowledge of the rainbow, and it is but merely the basis and no more:

The refrangibility alone affords a solution to this phenomenon, so common, so little known, and of which very few beginners have a clear idea: let us attempt to make the thing intelligible to all the world. Let us suspend a glass full of water, exposed to the rays of the sun, and place ourselves between it and the sun. The question then is, why does this globe send colours to my eyes; and why certain colours? Masses of light, millions of fascis, fall on this globe from the sun: in every one of these rays there are primitive tracts or homogeneous rays, yellow, green, &c. all are refracted at their incidence on the globe, and every ray is differently refracted according to its species and the place of its incidence. You are already informed that the red rays are the least refrangible; the red rays of a certain determinate fascis will be united in a certain determinate point at the bottom or opposite side of the globe, while at the same time the blue and purple rays of the same fascis will converge to other points. These red rays will also pass out of the globe at a certain part of the surface and the green, blue and purple at other parts. This is not enough: we must examine the points at which the red rays incide at their entrance into the globe, and also at their emerging to arrive at the eye.

To give this explanation every degree of perspicuity that can be required, let us imagine the globe to be what in fact it is, an assemblage of an infinity of plane surfaces; for a circle being composed of an infinite number of infinitely small right lines, a sphere is, as to its superficies, composed of an infinite number of planes. The red rays ABC (fig. 24.) arrive parallel from the sun and fall on these three small surfaces. Is it not evident that each will be refracted according to its degree of incidence? Is it not manifest that the red ray A falls more obliquely on its small surface than the red ray B falls on its small surface? So that both arrive at

R by different routes. The red ray C falling on its small surface yet more obliquely, is refracted still less and arrives also at the point R scarcely at all refracted. Here are then three red rays, that is, three fascies of red rays which terminate at the same point R: from this point R each ray makes an angle of reflection equal to its angle of incidence; each is refracted at its emergence out of the globe, departing from the perpendicular of the new small surface which it meets with, in the same manner as each was refracted at its incidence: they therefore all return parallel and enter the eye according to the angle proper to red rays. If there be a sufficient quantity of these homogeneous red rays to affect the optic nerve, it is out of doubt that you can have no other sensation than that of redness. The rays ABC are termed the visible or efficacious rays of this drop; for every drop has its visible rays.

There are thousands of other red rays, which falling on other small surfaces of the globe, higher or lower, or which falling on these same surfaces with a different obliquity do not arrive at R; these are lost to you; but may arrive at another eye placed higher or lower.

Thousands of orange, green, blue, or violet rays fall, it must be allowed, together with the visible red rays on these surfaces ABC; but you cannot receive them for this reason, that they are more refrangible than the red rays; whence, in entering altogether at the same point, each takes a different course in the globe; all being refracted fall below the point R, and they are more refracted at their emergence out of the globe. The same power which refracted them nearer to the perpendicular to each surface at their incidence, throws them farther from it at their return into the air. They all therefore return in a direction that passes beneath (above) your eye; but depress the globe and you will render the angle (of reflection) smaller. When this angle is about forty degrees, seventeen minutes, you will receive only violet rays.

There is no one but on this principle may easily conceive the mechanism of the rainbow; suppose many ranks

ranks or bands of drops of rain, each will produce exactly the same effect as the globe.

Cast your eyes on this bow and, to avoid confusion, consider only three ranks of drops of rain, three coloured bands. It is clear that the angle POL is less than the angle VOL, and that the angle ROL is the greatest of the three (fig. 25). This largest angle is that of the primitive red rays; the intermediate one is that of the primitive green, and the smallest, POL, is that of the primitive purple rays. You therefore ought to see the iris red at its exterior limb, green in the middle, and purple and violet at its internal edge.

Observe only, that the last or terminating part of the region of violet is tinged with the white of the cloud, in which it gradually shades and is lost.

You conceive then easily that you see these drops only by means of the efficacious rays which arrive under determinate angles to your eyes, after one reflection and two refractions. Change the position of your eye; instead of O let it be in T, and the rays you then see are no longer the same, the rank which before produced the red will now give you the orange or green; and in like manner of the rest; and at every motion of the head you see a new rainbow.

The first rainbow being well conceived, you will easily understand the second, which is commonly seen to encircle the other, and is called the false rainbow, because its colours are less vivid, and in an inverted order. In order to see two rainbows, it is requisite that the cloud be sufficiently extended and sufficiently dense. This arc which is coloured like the first and encircles it, is formed in like manner, by the rays which the sun darts on these drops of rain, which are refracted in such a manner that each set of drops reflects back the primitive colours to your eyes; one drop a red and another a violet ray. But all this is performed in a manner contrary to what happens in the smaller bow; why so? because your eye which received the efficacious ray of the small arc, which arrived from the sun to the superior parts of the drops,

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on the contrary receives the rays of the great bow which were incident on the lower parts of the drops.

You perceive that the drops of water of the small bow receive the rays of the sun at the superior or upper part of each drop; (fig. 26.) the drops of the great rainbow on the contrary receive the rays which arrive at their lower part. Nothing will be easier, I think, for you to conceive than how the rays are twice reflected in the drops of this great rainbow; and how these rays twice refracted and twice reflected must produce an iris of an order opposite to the first, and of a fainter colour. Thus you have seen that the rays enter into the lower part of the drops of water of this exterior iris.

A body of rays presents itself to the surface of the drop in G (fig. 27.) a part of the rays is there refracted into the drop and another part is dispersed by reflection; here is already a loss of rays for the eye. The reflected part arrives at H; half of this part escapes into the air, emerging from the drop, and is therefore lost to you. The little which remains in the drop is reflected to K, where another part escapes being the third diminution. That which remains is reflected to M; and at this emergence another part is scattered again, being a fourth diminution, and that which is left arrives at length in the line MN. This drop then has the same number of refractions as the drops of the small bow; but there are, as you see in the greater bow, two reflections instead of one. There is therefore twice as much light lost in the great bow in which the light is twice reflected, and the loss is only half as much in the small bow, in which the drops reflect the light but once. It is therefore evident that the exterior bow ought always to be only half as bright as the small interior arc. It is also shewn, from the double course which the rays make, that they ought to arrive at your eyes in a manner contrary to those of the first bow. For let your eye be placed in O (fig. 28). In this place O, it receives the least refrangible rays of the first exterior rank of the small bow, and ought to receive the most refrangible

gible of the exterior rank of the second arc; these are the violets. The figure represents the two rainbows in their order, three colours only being taken notice of to prevent confusion.

Nothing more remains but to examine why these colours are always seen in a circular figure. Consider the line OZ which passes from your eye. Let the two drops be conceived to move always at an equal distance from your eye, and they will describe the bases of cones (fig. 29.) whose common vertex will be in your eye. Imagine the ray from the drop R proceeding to your eye O, to turn about the line OZ as an axis, forming always for example an angle with (the line proceeding from) your eye of forty-two degrees two minutes; it is evident that that drop will describe a circle that to you will appear red? Let the other drop be supposed to turn in like manner, making always an angle of forty degrees seventeen minutes, and it will form a violet circle: all the drops which lie in the same plane will therefore form a circle of violet, and the drops which are in the plane of the drop R will form a circle of red. You therefore see the rainbow in the form of a circle: but you do not see an entire circle because the earth intercepts part of it; you see only an arc or portion of a circle.

The greater part of these truths could not be known either by Antonio de Dominis or Descartes: they could not know why the different angles gave different colours; but it was enough to have discovered the art. The more subtle parts of art are seldom obtained by the first inventors. Not being able at that time to divine that colours depended on the refrangibility of rays, that each ray contained in itself a primitive colour, that the different attraction of these rays occasioned their refrangibility, and caused those aberrations which make the different angles. Descartes abandoned himself to his genius for invention to explain the colours of the rainbow. He has employed the imaginary *rotation and tendency to rotation* of his globules; a proof of genius but a proof of error. Thus it was that to explain the systole and diastole of the heart, he imagined a motion and conformation

conformation of the viscera, the falsity of which is known to every anatomist. Descartes would have been the greatest philosopher on earth, if he had invented less.

C H A P. X.

New Discoveries respecting the Cause of Colours which confirm the preceding Doctrine. Demonstration that Colours are occasioned by the Thickness of the Parts which compose Bodies, though Light is not reflected by impinging on those Parts,

A more profound Enquiry into the Cause of Colours. Truths of the greatest Consequence deduced from a vulgar Experiment. An Experiment of Newton. Colours depend on the Thickness of the Parts of Bodies though the Parts do not themselves reflect the Light. All Bodies are transparent. Proof that Colours depend on the Thickness, without the solid Parts, in reality, reflecting the Light.

FROM every thing that has hitherto been said, it follows, that all colours arise from the mixture of the seven primordial colours, which the rainbow and the prism enable us to see distinctly.

Those bodies which are best adapted to reflect the red rays, and whose parts absorb or let pass the other rays, will be red, and so of the rest. This is not to be understood as if the parts of bodies in reality reflected the red rays; but that there is a power, a force hitherto unknown, which reflects these rays from near the surface and from the bosom of the pores of bodies.

Colours are therefore in the rays of the sun, and are returned back to us from near the surfaces of bodies, from the bosoms of the pores and from a vacuum. Let us now enquire in what consists the power of bodies to reflect colours to us, that which causes scarlet to appear red, the meadows green, and the pure sky blue;

for to say that it arises from the differences of their parts is to speak indeterminately and to signify nothing.

A diversion of infants, which seems to contain nothing in it but what is despiseable, afforded Mr. Newton the first hint of the new truths we are about to explain. To a philosopher every thing ought to be a subject of meditation, nothing ought to appear trifling in his eyes. He observed that, in the soap bubbles which children make, the colours change every moment, passing from the top of the bubble in proportion as its thickness diminishes, till at length the weight of the water and soap which always runs to the bottom, breaks the equilibrium and the whole vanishes. He conjectured from thence, that colours might depend on the thickness of the parts that compose the surfaces of bodies, and to render the thing certain, he made the following experiments:

Let two glasses touch each other in a single point: it is not necessary that they should be both convex; it is enough if one be so, and it be placed upon the other. Let water be put between these glasses in order to make the experiment more sensible: though it succeeds when there is nothing but air intercepted between them: press these glasses a little together, a little black transparent spot will appear at the point of contact; about this point, which is environed with a small quantity of water, coloured rings are formed in the same order and appearance as in the bubble of soap water: lastly, by measuring the diameters of these rings, and the convexity of the glass, Newton determined the different thicknesses of the parts of the water which produce these different colours. He calculated the thickness necessary to reflect the white rays; this thickness is about four parts of an inch divided into a million parts; that is to say, four millionth parts of an inch. The azure blue and colours bordering on violet depend on a thickness which is much less. Thus the smallest vapours which are raised from the earth and give colour to the clear air, having a very thin surface, produce that heavenly blue that charms the sight.

Other

Other experiments equally ingenious tend to confirm this discovery, that it is on the thickneses of the (parts composing) surfaces that colours depend. The same body which was green when its particles were somewhat gross, becomes blue when they are rendered sufficiently thin to reflect only the blue rays and permit the others to pass thro'. These truths obtained by a research of so delicate a nature, and which seem to unveil themselves to human sight, deserve to be more minutely enquired into; this part of philosophy is a microscope with which the mind discovers magnitudes infinitely small.

All bodies are transparent; it is only necessary to render them sufficiently thin that the light finding only a small plate or leaf to pass thro', may be transmitted without obstruction. Thus when gold leaf is exposed to an orifice in a darkened chamber, it reflects by its surface the yellow rays which cannot be transmitted thro' its substance, and transmits the green; so that gold then produces a green colour; a new confirmation that colours depend on various thickneses. A yet stronger proof is, that in the experiment of the convex (and) plane glass, water is not the only element that gives different colours: the air has the same effect: only the coloured rings which it produces between the two glasses are larger in diameter than those produced by the water. There is therefore a secret proportion established by nature, between the force of the constituent parts of bodies, and the primitive rays which colour bodies; the thinnest laminae will give the fullest colours; and to produce black the same exact thickness or rather tenuity or thinness is necessary as obtains at the upper part of the soap bubble, at which a small black point is observable, or the same tenuity which obtains at the point of contact of the convex and concave glass where likewise is produced a black spot.

Yet once more, it is not to be thought that the solid parts of bodies reflect the light, because colours depend on the thickness of those parts. There is a power combined with or attached to that thickness, a power which acts near that surface; but it is not the surface which reflects

reflects or repels. It seems to me that the reader ought to be arrived at the point to be surprised at nothing; but what he has seen leads farther than may be suspected, and such a number of singularities are but, to use the expression, the frontiers of a new world.

C H A P. IX.



Continuation of the Discoveries. Mutual Action of Bodies upon Light.

A very singular Experiment. Consequences of these Experiments. Mutual Action of Bodies upon Light. All this Theory of Light has an Agreement or Analogy with the Theory of the Universe. Matter has more Properties than are suspected.

THE reflection of light, its inflection, its refraction, and its refrangibility are known, the origin of colours is discovered, and even the thickness of bodies which is necessary to occasion certain colours is determined.

It is demonstrated to the mind and to the eye that solid surfaces are not that which reflects the light. For if these solid surfaces really reflected it, 1. The point at which two convex glasses touched would reflect and not be obscure. 2. Every solid part that reflected a single species of rays, ought to reflect them all or every species. 3. The solid parts would not transmit the light in one place and reflect it in another, for being all solid all would reflect. 4. If the solid parts reflected the light it would be impossible to see one's image in a mirror; because the mirror being rough and uneven could not reflect the light regularly. It is therefore indubitable that there is a power that acts on bodies without touching them, and that this power acts between bodies and light. In short, so far from light rebounding from bodies themselves, it is to be believed that the greater part of the rays which fall on the solid parts remains there, being lost and extinguished.

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We shall carry this introduction on light no farther: perhaps we have even been too diffuse in a treatise that is simply elementary: but the greater part of these truths were then (at its first publication) new to many readers. Before we pass to the other part of philosophy, let us remember that the theory of light, has something in common with the theory of the universe in which we are about to enter. This theory is that there is a species of attraction observed between bodies and light, as we shall proceed to explain that there is also an attraction between all the globes of our universe. These attractions are manifest from their several effects; but it is always a tendency of one body towards another which is discovered by the help of experience and geometry.

These discoveries ought at least to render us extremely circumspect in our determinations concerning the nature and essence of things. Let us consider that we know nothing but by experience. Without the touch, we should have had no idea of the extension of bodies: without eyes we should never have imagined the existence of light; if we had never experienced motion we should never have believed matter to be moveable; the very small number of senses God has given us, serves us to discover a very small number of the properties of matter. Reason supplies what we want in sense, and informs us that matter has still other attributes, as attraction and gravitation; it has probably many others that depend on its nature and of which philosophy may perhaps one day afford some idea to men.

For my part, I avow, that the more I reflect the more I am surpris'd that any difficulty should be made about admitting a new principle or property in matter. It may perhaps have an infinite number: no one thing resembles another in nature. It is very probable that the Creator has made water, fire, air, earth, vegetables, minerals, animals, &c. on principles very different. It is strange that we should set ourselves against the new riches which are presented to us; for is not man enriched by the discovery of new properties in the matter of which he is formed?

LETTER

LETTER FROM THE AUTHOR,

Which may serve for the last Chapter of the theory
of Light.

SIR,

I Should have had the honour of answering yours sooner, if I had not been prevented by continual illness which has exercised my patience more than Newton has my mind. I believe, Sir, that your doubts would have been such even with him. You say, it is to be regretted that he did not more clearly explain himself concerning the reason which often occasions the attractive force to become repulsive, and concerning the force by which the rays of light are darted forth with such a prodigious velocity; to which I may venture to add, that it is to be regretted that he could not know the cause of these phenomena. Newton, the first of men, was nevertheless but a man; and the first springs which nature employs are not within our reach when they cannot be subjected to calculation. It is easy to compute the force of the muscles, but all the mathematics are insufficient to inform us why they act at the command of our will. All the knowledge we have of the planets can never inform us why they turn from west to east, rather than in the contrary direction. Newton, tho' he anatomized the light, has not discovered its intimate nature. He knew well that the elementary fire is endued with properties which the other elements have not.

It passes through an hundred and thirty millions of leagues in a quarter of an hour. It does not appear to tend towards a center, like body; but expands itself uniformly and equally in every direction, contrary to the other elements. Its attraction towards the body it touches, and from whose surface it rebounds, has no common ratio with the universal gravity of matter.

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It is not even proved that the rays of elementary fire do not penetrate each other. Newton therefore, struck with all these singularities, seems always to doubt whether light be a body or not. For my part, Sir, if I durst risque my doubts, I must confess to you that I do not think it impossible that the elementary fire may be a being apart which animates nature and possesses the intermediate step between body and some other being we are unacquainted with: in the same manner as certain organized plants serve as a passage or gradation between the vegetable and animal kingdoms. Every thing tends to induce us to believe that there is a chain of beings that rise by degrees. We are but imperfectly acquainted with some animals of this immense chain: and we diminutive men with our little eyes, with our little understanding, rashly divide all nature into matter and spirit, comprehending God therein, and being ignorant otherwise of a single word of what either matter or spirit is. I expose to you my doubts, Sir, with the same frankness as you have communicated yours to me. I congratulate you on the cultivation of philosophy, which ought to teach us to doubt respecting every thing which is not within the reach of the mathematics or of experiment, &c.

PART THE THIRD.

C H A P. I.

The first Ideas respecting Weight and the Laws of Attraction: That the subtile Matter, Vortices, and a Plenum are to be rejected.

Attraction. Experiment which demonstrates a Vacuum and the Effects of Gravitation. Gravity acts in the Ratio of the Masses. Whence its Power originates. It cannot rise from a pretended subtile Matter. Why one Body weighs more than another. The System of Descartes can afford no Solution.

AN intelligent reader, who has viewed with attention the wonders of light, convinced by experience they are not caused by the known impulsion, will without doubt be impatient to observe this new power, concerning which we have frequently spoken under the name of attraction, which acts on all other bodies more sensibly, and in another manner than bodies do on light. Once more let us not be displeased or disgusted at terms, but simply examine the facts.

I shall indifferently make use of the terms attraction and gravitation, in speaking of bodies, whether they sensibly tend to each other, or revolve in immense orbits about a common center, or fall to the earth, or unite to compose solid bodies, or run together into drops to form liquids. Let us enter upon the matter.

All known bodies have weight, and it is long since absolute levity has been reckoned among the known errors of Aristotle and his sectators.

Since the invention of that famous machine the air pump, it has been more within our power to be acquainted

ed with the weight of bodies; for when they fall in the air, the parts of the air sensibly retard the motion of those whose surfaces are large and volume small; but in this machine, deprived of air, bodies, left to that force, whatever it be which precipitates them, when obstacles do not intervene, fall with their whole weight.

The air pump invented by Otto Guericke, was soon after brought to perfection by Boyle. Since that time very long recipients have been made and entirely cleared of air. In one of these long recipients, composed of four tubes, all together making a length of eight feet, pieces of gold, paper, and feathers, were suspended at the top by means of a spring: the business was then to determine what would happen when they were let go by loosening the spring. Good philosophers foresaw that the whole would fall in the same time; but the greater number affirmed, that the heaviest bodies would fall much quicker than the others: this greater number which is almost always deceived, was much astonished to behold in all the experiments, the gold, lead, paper, and feather, fall equally quick, and arrive at the bottom of the recipient at the same time.

They who still maintained the plenum of Descartes and the pretended effects of a subtile matter, could not give any good reason for this effect; for facts were as rocks to them. If every part of space were full, when the possibility of motion was granted them (though impossible) at least this pretended subtile matter filled all the recipient; its quantity would be equally as great as if it had been filled with water or mercury: it would therefore at least oppose this rapid descent of bodies: it would resist the large pieces of paper according to its surface, and suffer the ball of gold or lead to fall much quicker. But these falls are finished at the same instant, and therefore there is nothing in the recipient that resists: this pretended subtile matter cannot therefore occasion any sensible effect in the recipient; consequently there must be some other cause that produces gravity. It is in vain to say, that it is possible that a subtile matter may remain in the recipient, since light penetrates it;
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for there is a very considerable difference. The light which is in this glass, does certainly not possess the hundred thousandth part of the space: but, according to the Cartesians, it is necessary that this imaginary matter should fill the recipient more exactly than if it were filled with gold: for there is much empty space in gold, and they admit of none in their subtile matter.

Now, by this experiment, the piece of gold which weighs an hundred thousand times more than the paper, descends as swiftly as the paper: consequently, the force that caused it to descend, has acted one hundred thousand times more on it than on the paper; in the same manner, as it requires an hundred times more force for my arm to move an hundred pounds, than to move one pound; the force which occasions gravitation acts therefore in the direct ratio of the mass of bodies. It acts in reality thus according to the mass of the body, and not according to the surfaces, so that a piece of gold reduced to powder, descends in the air pump equally quick with the same gold beat into leaf. The figure of bodies here changes nothing of their gravity: the power of gravity therefore acts according to the internal nature of bodies, and not in the ratio of their surfaces.

These pressing truths have never been answered but by the chimerical supposition of vortices. They suppose that the pretended subtile matter which fills all the recipient does not gravitate. A strange notion, that in this case becomes absurd: for we do not speak of a matter without gravity, but without resistance. All matter resists by its *vis inertiae*. If therefore the recipient were full of any kind of matter, that matter would resist infinitely: this appears to be strictly demonstrated.

This power does not reside in the pretended subtile matter, concerning which we shall treat in the next chapter; this matter must be a fluid. Every fluid acts upon solids in the ratio of their surfaces; whence a ship presenting less surface at its head divides the sea, which would resist its stern. Now, when the superficies of a body is the square of its diameter, its solidity will be the cube of the same diameter: the same power cannot

at once act in the ratios of the cube and the square, therefore weight or gravitation is not the effect of this fluid. Besides, it is impossible that this pretended subtile matter should on the one hand have force sufficient to precipitate a body from a height of fifty-four thousand feet in a minute, for such is the fall of bodies; and that on the other hand it should want power to hinder a pendulum of the lightest wood from returning vibration after vibration in the air pump, whose whole contained space is supposed to be exactly filled with this imaginary matter. I do not fear to affirm, that if a species of impulse should be discovered to be the cause of gravity, or the weight of bodies towards a center, or of universal attraction, that impulse will be entirely of another nature with that which is known to us.

Here then is a truth of the first consequence which has already been mentioned, and is here proved, that there is a power which causes all bodies to gravitate in the direct ratio of their masses.

If we enquire why one body is more heavy than another, it will be easy to find the only reason: we shall determine that the one body must have more mass or matter, under the same extension: thus, gold weighs more than wood, because in gold there is more matter, and less void than wood.

Descartes and his followers, if he still have any, maintain that one body is heavier than another, without having more matter: not content with this notion, they support it by another equally ill founded: they admit or suppose a great vortex of the subtile matter to environ our globe; and it is this great vortex, say they, which in circulating drives all bodies towards the center of the earth, and makes them exhibit what we call weight. It is true that they have not given any proof of this assertion; there is not the least experiment, the least analogy of the things which we are slightly acquainted with, that affords the smallest presumption in favour of this vortex or subtile matter; therefore, for the reason that this system is a pure hypothesis, it ought to be rejected. It is nevertheless upon that ground alone that it has gained credit.

This

This vortex could be conceived without any effort or trouble; a vague explanation of things was easily given by pronouncing the term subtile matter: and when philosophers perceived the absurdities and contradictions attached to this philosophical romance, they considered about correcting rather than abandoning it.

Huyghens and many others have made a thousand corrections, whose insufficiency they themselves confessed; but what shall we substitute in the place of the subtile matter? This reasoning which is too common, is that which confirms the most part of men in error, and on the wrong side. We ought to abandon that which we see to be false and not supportable, as well when we have nothing to substitute, as if we had the demonstrations of Euclid to put in its place. An error is neither more nor less so, whether it be replaced with truth or not; ought I to admit the horror of a vacuum in a pump, because I am yet ignorant by what mechanism the water is made to ascend in it?

Let us begin then, before we proceed further, by proving that the vortices of subtile matter do not exist; that a plenum is not less chimerical; and that therefore the whole of this system, founded on these imaginations, is no more than an ingenious romance without probability. Let us see what these imaginary vortices are, and afterwards enquire if a plenum be possible.

C H A P. II.

That the Vortices of Descartes and a Plenum are impossible, and consequently that there is another Cause of Gravitation.

Proof of the impossibility of Vortices. Proofs against the Existence of a Plenum.

DESCARTES supposes an immense aggregate of insensible particles, which carries the earth with a rapid motion from west to east; and which, from one

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pole

pole to the other, moves parallel to the equator: this vortex which extends beyond the moon, and carries along the moon in its course, is itself included in another vortex, yet more vast, which touches the other vortex without being confounded with it, &c.

I. If this were true, the vortex which is supposed to move about the earth from west to east, ought to impel bodies placed on the earth from west to east; now, these bodies in falling, all describe a line, which if prolonged, would pass nearly through the center of the earth, therefore this vortex does not exist.

II. If the circles of this pretended vortex moved and acted parallel to the equator, bodies ought to fall each perpendicularly under that circle of the subtile matter to which its situation corresponds: a body at A near the Pole, ought, according to Descartes, to fall towards R. But it falls nearly in the line AB (fig. 30.) which makes a difference of about fourteen hundred leagues; for we may compute fourteen hundred common leagues of France from the point R to the equator of the earth B, consequently this vortex does not exist.

III. If in order to support this romance of the vortices, it is thought proper to suppose that a fluid that whirls is not turned on its axis, if it be imagined that it can turn in circles, every one of which shall have its center in the center of the vortex itself; nothing more is necessary than to make the experiment of a drop of oil, or a large bubble of air inclosed in a glass globe full of water: make this globe turn on its axis, and you will see this oil or air arrange itself in the form of a cylinder, in the middle of the globe, making an axis from one pole to the other; for all experience as well as argument, overthrows the doctrine of vortices.

IV. If this vortex of matter about the earth, and the others which are pretended to revolve about Jupiter, Saturn, &c. existed, all these immense vortices turning with such rapidity in different directions, could never suffer a ray of light from a star to come to us in a right line. It is proved that these rays arrive in a very short
time

time with respect to the vast space they pass over: whence it follows that these vortices do not exist.

V. If these vortices carried the planets from west to east, the comets which pass over the same spaces in all directions from east to west and from north to south, could never pass. And even if it be supposed that comets have not passed from east to west or from north to south in reality, nothing will be gained by this evasion; for it is known that when a comet is in the region of Mars, of Jupiter or of Saturn, it moves incomparably more swift than these planets, and therefore cannot be carried by the same bed of fluid which is supposed to carry the planets; on this account therefore the existence of the vortices is proved not to obtain.

VI. If these fluids existed, a minute would be sufficient to destroy all motion in the stars. Newton has demonstrated that every body, which moves uniformly in a fluid of the same density, loses the half of its motion before it has passed thro' the space of thrice its diameter. This admits of no answer.

VII. Suppose again, which is impossible, that the planets could be moved in these imaginary vortices, they could not move but in circles, because these vortices at equal distances from the center, would be equally dense; but the planets move in ellipses; and consequently are not carried by vortices; therefore, &c.

VIII. The earth has its orbit, in which it revolves between that of Venus and that of Mars: all these orbits are elliptical, and have the sun in their center (focus): now when Mars, Venus and the Earth are nearest each other, the matter of this pretended torrent will be much more contracted as to its bounds: it ought therefore to precipitate its course as a river pent up between its banks or running under the arches of a bridge. This fluid ought to carry the earth with much more velocity than in any other position; but on the contrary the motion of the earth is slowest at that time.

When Mars appears in the sign Pisces, Mars, the Earth and Venus are nearly at that proximity which the figure indicates (fig. 31.) the sun then appears to be retarded

tarded a few minutes, that is, the earth is retarded; it is then demonstrated to be impossible that there should be a torrent of matter that carries the planets: therefore this vortex does not exist.

IX. Out of the most esteemed demonstrations which destroy the vortices, we shall chuse the following: by one of the grand laws of Kepler, every planet describes equal areas in equal times: by another law not less established, every planet makes its revolution about the sun in such a manner, that if, for example, its mean distance from the sun be ten, take the cube of this number which makes a thousand, and the time of the revolution of this planet about the sun will be proportioned to the square root of the number one thousand. Now, if there be beds of matter that carry the planets, these beds cannot follow these laws; for it would be necessary that the velocities of these torrents should be at the same time reciprocally proportional to their distances from the sun and to the square roots of those distances, which is incompatible.

X. Lastly, in addition to these arguments, all the world sees what would happen to two fluids circulating in contact with each other. They would necessarily mix and form a chaos, instead of keeping separate. This alone would have cast a ridicule on the Cartesian system that would have overthrown it, if the desire of novelty, and the habit which then prevailed of letting things pass without examination, had not produced the contrary effect.

We are now to prove that the plenum in which these vortices are supposed to move, is as impossible as the vortices.

I. A single ray of light which does not weigh near the hundred thousandth part of a grain, or rather which has no weight at all, would have had to derange the whole universe, if it had been necessary for it to open a passage to us through an immense space, every point of which resisted itself and thro' the whole line of which it would be pressed.

II. Let

II. Let the two hard bodies A and B be supposed to touch each other at one surface, and to be environed in a fluid that presses them on all sides: now, when they are separated, it is clear that the pretended subtile matter arrives sooner at A where they are separated than at B (fig. 32.) There is therefore a moment in which B will be void; consequently even in the system of the subtile matter, a void, that is to say, space is given.

III. If a vacuum and space did not exist, there could be no motion even according to the system of Descartes. He supposes that God created the universe full and consisting of small cubes: let there be then a given number of cubes representing the universe, without the least interval between them, it is evident that one of them must quit the place it occupied; for if every one remained in its place there would be no motion, since motion consists in change of place, in passing from one to another point of space: now, who is there that does not conceive that one of these cubes cannot quit its place without leaving a void behind it at that instant? For it is clear that this cube in turning upon itself, must present its angle to the cube which touches it before the angle can be broke off. There is therefore then a space between those two cubes, and consequently even in the system of Descartes, there can be no motion without a vacuum.

IV. If all were full, as Descartes will have it, we should ourselves in walking experience an infinite resistance; instead of which, we find only that of the fluids in which we are, for instance, that of water, which resists eight hundred and sixty times more than air; or that of mercury, which resists about fourteen thousand times more than the air: now the resistances of fluids are as the squares of the velocities; that is to say, if a man passes thro' a foot space of mercury in a third (or sixtieth part of a second) and in the second third has twice the velocity, the mercury which is fourteen thousand times denser than air, will resist as the square of two; thus, the resistance would presently become infinite: therefore
if

if all were full, it would be absolutely impossible to move a step, or to breathe, &c.

V. Attempts have been made to elude the force of this demonstration, but there is no answering to a demonstration but by an error. It is pretended that this infinite torrent of subtile matter, penetrating the pores of bodies, could not impede motion: but they do reflect that every body which moves in a fluid experiences so much the more resistance, the greater surface it exposes to the fluid: now the more pores a body has the greater is its surface: so that the pretended subtile matter in filling up the internal part of a body, impedes its motion much more than if it only touched the external surface: this is also strictly demonstrable.

VI. In a plenum, all bodies (of equal magnitude) ought to be equally heavy; it is impossible to conceive that a body can gravitate upon, or press me, but by its mass: a pound of gold in powder weighs as much on my hand, as a lump of gold of a pound weight. In vain the Cartesians reply that the subtile matter which penetrates the pores of bodies does not gravitate, and that nothing is to be esteemed heavy but that which is not subtile matter: this opinion of Descartes is purely a contradiction to himself; for according to him, this pretended subtile matter is the only cause of the weight of bodies, by pressing them towards the earth; it therefore itself gravitates upon bodies; therefore if it gravitate, there is no reason why one body should be heavier than another, every thing will have an equal mass (or density) either solid or fluid; a plenum is therefore a chimera, and a vacuum exists; nothing can come to pass in nature without a void, and gravitation is not the effect of a supposed vortex imagined to exist in a plenum.

We have seen, by the experiment in the air pump, that there must of necessity be a force that causes bodies to descend towards the center of the earth, that is to say, which gives them weight, and that this force acts after the ratio of the masses of bodies; we must now enquire what are the effects of this force; for if we discover its effects, it is evident it exists. Let us not therefore
imagine

imagine causes, and make hypotheses, for it is the sure way to mislead ourselves; let us follow step by step what is really in nature; we are travellers just arrived at the mouth of a river, and must ascend before we pretend to determine the place of its origin.

C H A P. III.

Gravitation demonstrated by the Discovery of Newton. History of this Discovery. That the Moon revolves in its Orbit by the Force of this Gravity.

History of the Discovery of Gravitation. The Proceeding of Newton. Theory drawn from these Discoveries. The same Cause which makes Bodies fall to the Earth, directs the Moon in her Orbit about the Earth.

EVERY body descends about fifteen (Paris) feet in the first second, in whatever part of the universe (or rather surface of the earth) it be placed. We see that the fall of bodies is accelerated near our globe: they all evidently tend towards the center of this globe; is there not a certain force that attracts them towards that center? And does not that force increase as the center becomes nearer? Copernicus had a feeble glimpse of this idea. Kepler embraced it but without method. The chancellor Bacon says formally, that it is probable that there is an attraction of bodies towards the center of the earth, and of this center towards bodies. He proposed in his excellent book *Novum scientiarum organum*, that experiments might be made with pendulums on the highest towers and at the greatest depths; for said he, if the same pendulums make quicker vibrations at the bottom of a well than on a tower, it must be concluded that gravity, which is the principle of these vibrations, will be much stronger at the center of the earth, to which the bottom of the well is nearer. He attempted likewise to make bodies descend from different heights,
and

and to observe whether they passed through less than fifteen feet in the first second; but there never appeared any variation in his experiments, the heights and depths at which they were made being too small. It remained therefore in uncertainty, and the idea of this force acting from the center of the earth continued a vague supposition.

Descartes was acquainted with this power; he even speaks of it in treating of weights; but the experiments which were necessary to elucidate this grand question were still wanting. The system of vortices had drawn away this vast and sublime genius; he wished, in creating his universe, to give the direction of every thing to the subtle matter; he made it the dispenser of all motion and all weight: by degrees Europe adopted his system, notwithstanding the protestations of Gassendi, who was less followed, because he was less rash.

One day in the year 1666, Newton being retired into the country, observed the fruit falling from a tree, as his niece Mrs. Conduit informed me; this led him into a deep meditation on the cause which thus draws all bodies in a line, which if prolonged would pass nearly through the center of the earth. What, demanded he to himself, is this force which cannot arise from all these imaginary vortices which are demonstrated to be so false? It acts on all bodies in proportion to their masses and not their surfaces; it would act on the fruit which has fallen from this tree, if it had been raised three or even six thousand toises. If so, this force ought to act from the region of the moon to the center of the earth, and if this be true, this power, whatever it may be, may then be the same with that which causes the planets to tend towards the sun, and with that which makes the satellites of Jupiter gravitate towards his center. Now, it is demonstrated by all the inductions drawn from the laws of Kepler, that all the secondary planets gravitate towards the center of their orbits; those which are nearer so much the more, and those which are farther off so much the less; that is to say, reciprocally in the proportion of the squares of their distances. A body placed

placed where the moon is which circulates about the earth and a body placed near the earth ought both to gravitate to the earth precisely according to this law.

Therefore in order to be assured that it is the same cause which retains the planets in their orbits and which here causes heavy bodies to fall, nothing more is required than admeasurement, no more is necessary than to find what space a heavy body passes through in a given time, and what space a body placed in the region of the moon would pass through in the same time. The moon itself is a body that may be considered as really falling from her highest point of the meridian. But this is not an hypothesis which is accommodated to a system as well as one can; it is not a calculation where one is contented with being near the matter. We must begin by knowing the exact distance of the moon from the earth, for which purpose it is necessary to have the measure of our globe.

Thus it was that Newton reasoned; but for the measure of the earth he made use of the erroneous estimation of seamen, who reckoned sixty English miles, that is twenty French leagues to a degree of the meridian, instead of seventy miles which is the truth. It is true that there was at that time a more exact measure of the earth. Norwood, an English mathematician in 1636, had measured a degree of the meridian sufficiently exact: he found it as he ought, to be about seventy miles. But this operation, though made thirty years before, was unknown to Newton. The civil wars which had troubled England, which are always no less destructive to science than to the state, had buried in oblivion the only just measure of the earth; and the vague estimation of the pilots was generally held to be true. By this account the moon was too near the earth and the proportions sought by Newton did not come out with exactness. He did not think it allowable for him to supply any thing and accommodate nature to his ideas: he chose rather to suit his ideas to nature: he therefore abandoned this beautiful discovery, which the analogy with the other stars rendered so probable, and in the demonstration

demonstration of which so little was wanting. A rare instance of candour which alone ought to give great weight to his opinions.

At length, by the help of measures taken more exactly and repeatedly in France as hereafter we shall relate, he found the demonstration of his theory. A degree of the earth was valued at five and twenty of our leagues; the moon was found to be distant sixty diameters of our earth, and Newton thus resumed the thread of his demonstration.

Gravitation towards our globe is in the reciprocal ratio of the squares of the distances of bodies from the center of our earth; that is to say, a body that weighs an hundred pound at the distance of one diameter from the (center of the) earth will weigh but one pound at the distance of ten diameters.

The force which causes gravity does not depend on vortices of subtile matter, whose existence is demonstrated to be false. This force whatever it may be acts not according to the surfaces but the masses of bodies. If it act at one distance, it ought to act at all distances; if it act according to the inverted ratio of these distances, it ought always to act according to that proportion on known bodies, when they are not at the point of contact; I would say at the nearest possible situation without being actually united. If according to this proportion, this force makes bodies pass through fifty four thousand feet in sixty seconds, a body which is about sixty semidiameters from the center of the earth ought in sixty seconds to fall through a space of only fifteen feet or thereabouts.

The moon at the time of her mean motion is distant from the center of the earth about sixty semidiameters of the earth; now by the measures taken in France we may know how many feet the orbit of the moon contains. It is thence known that at the time of her mean motion she describes one hundred and eighty seven thousand, nine hundred and sixty one Paris feet in a minute (fig. 33.) The Moon in her mean motion has fallen from A to B; she has therefore obeyed the projectile force

force which impels her in the tangent AC; and likewise the force which would have made her descend in the line AD equal to CB: take away the force which directs her from A to C and a force will remain which may be represented by the line CB; this line CB is equal to AD: but it is demonstrated that, the circle AB being equal to one hundred and eighty seven thousand nine hundred and sixty one feet, the line AD or CB will be equal to only fifteen: therefore, whether the moon fall from A or D it is here the same thing, she would have run through fifteen feet in a minute from C to B and consequently the same length in a minute from A to D. But in passing through this space in a minute, she makes precisely three thousand six hundred times less way than a falling body would here upon the earth: therefore gravity which thus acts on all bodies, acts also between the earth and moon precisely according to the inverted ratio of the square of the distance.

But if this power which animates bodies, do direct the moon in her orbit, it must also direct the earth in her orbit, and produce the same effect in the planet Earth as it does in the planet Moon. For this power is every where the same; all the other planets ought to be subjected to it: the Sun ought also to prove its law; and if there be no motion of the planets with respect to each other, which is not the necessary effect of this power, it must be confessed that all nature demonstrates its existence. We shall proceed to observe this more at large.

C H A P. IV.

That Gravitation and Attraction direct all the Planets in their Courses.

How the Theory of Gravity is to be understood according to Descartes. What the centrifugal and centripetal Forces are.

This Demonstration proves that the Sun is the Center of the Universe and not the Earth. From the preceding Reasons it is that we have more Summer than Winter.

Almost all the theory of gravitation with Descartes is founded on this law of nature, that every body which is moved in a curve line tends to depart from its center in a right line which would touch the curve in a point (or be tangent to it). Such is the body which is thrown out of a sling &c. All bodies turning with the earth in like manner make an effort to depart from the center, but the subtile matter, says he, making a greater effort of the same kind repels all other bodies towards the center.

It is easy to see that it was not the property of the subtile matter to make this grand effort, and to remove itself from the center of this pretended vortex rather than other bodies; on the contrary, supposing it to exist, its nature would be to go to the center of its motion and to suffer those bodies to go to the circumference which had more (specific) mass. This is what, in fact, happens when a table is turned round in which is fixed a tube containing many powders and liquors of different specific gravities; every thing which has the greater mass removes from the center, and those things which are lightest approach towards it. Such is the law of nature, and when Descartes made his subtile matter circulate towards the circumference, he began by violating this law of centrifugal forces which he had laid down as his first principle. He might at will imagine that God had created cubes turning on each other: that the grinding

grinding of these cubes produced a subtile matter which escaping on all sides, acquired by that means a greater degree of swiftness: that the center of a vortex would become encrusted, &c. But it was necessary that these imaginations should rectify that error.

Without wasting more time in combating these beings of the fancy; let us follow the mechanical laws that take place in nature. A body that moves circularly, takes, at every point of the curve it describes, a direction that would carry it farther from the circle in a right line.

This is true. But we must be mindful that this body does not thus remove from the center but by this other grand principle: that every body being indifferent in itself to rest or motion and possessing that inertia which is an attribute of matter, necessarily follows the line in which it is moved. Now every body, which turns about a center, follows the direction of an infinitely small right line which would become an infinitely long right line, if it meet with no obstacles. The result of this principle reduced to its just value is no more than that a body which moves in a right line will always move in a right line: therefore another force is necessary to make it describe a curve: therefore this other force by which it describes a curve, would make it fall to the center every instant, in case the projectile motion in a right line were to cease. In truth, the body would every moment go off in the courses A, B or C, in case it escaped.

But likewise in each successive moment it falls from A, B and C, towards the center; because its motion is composed of two sorts of motion, the projectile motion in a right line and a motion likewise in a right line, impressed by the centripetal force, the force by which it would go to the center. So that from the reason that the body would describe the tangents A, B and C, it is demonstrated that there is a power that draws it out of these tangents at the very instant the motion begins. It is therefore absolutely necessary to consider every body which moves in a curve as moved by two powers, one
of

of which is that which would make it describe the tangents, and which is termed the centrifugal force, or rather the force of inertia or inactivity, by which a body always moves in a right line if not prevented; and the other force is that which draws bodies to a center, which is called the centripetal force, and is the true force.

From the establishment of this centripetal force, there immediately results the demonstration that every body that moves in a circle, an ellipsis or any other curve whatsoever, is moved round, a center to which it tends. It likewise follows that this moving body whatever part of the curve it passes thro', will describe in its largest as well as smallest arcs equal areas in equal times. If, for example, a body in a minute passes thro' the curve which borders the space ACB (fig. 35.) which space contains an hundred square miles, it ought in two minutes to describe the curve bordering the space BCD of two hundred square miles.

This law inviolably observed by all the planets, and unknown to antiquity, was discovered near an hundred and fifty years ago by Kepler, who has merited the name of legislator in astronomy notwithstanding his physical errors. He could not then discover the reason of this law to which the heavenly bodies are subjected. The vast sagacity of Kepler discovered the effect, of which the genius of Newton has discovered the cause.

I proceed to give the substance of Newton's demonstration; it will easily be comprehended by every attentive reader; for there is a natural geometry in the minds of men which enables them to see relations and agreements when they are not too complicated.

Suppose the body A (fig. 36.) to be moved to B in a very small space of time; at the end of a like space, a motion equally continued, for here is no acceleration, would cause it to arrive at C; but at B it finds a force which impels it, in the line BHS; it then follows, neither the course BHS nor ABC; describe the parallelogram CDBH, and the body being moved by the force BC and the force BH will describe the diagonal BD; now these

these lines BD and BA conceived infinitely small are the *nascentia* of a curve, &c. therefore the body ought to move in a curve.

It ought to describe the borders or peripheries of equal areas in equal times; for the triangular space SBA is equal to SBD: these triangles are equal; therefore the areas are equal, and every body which describes equal areas in equal times by motion in a curve, makes its revolution about the center of the forces to which it tends; the planets then tend to the sun and not the earth. For in taking the sun for the center these areas are always found proportional to the time: if you except the small irregularities caused by the gravitation of the planets towards each other.

To understand properly what is said when we speak of areas proportional to the times, and to see evidently the advantage you obtain from this knowledge, observe the earth carried in its ellipsis about the sun S its centre (fig. 37.) When it passes from B to D, it sweeps over as great a space as when it runs thro' the greater arc HK: the sector HK gains in breadth what the sector BD has in length. To make the areas of these sectors equal in equal times it is necessary that the body should move quicker towards HK than towards BD. So that the earth and every other planet is moved swifter towards its perihelium which is the (point of its) curve nearest the sun than in its aphelium, which is the (point of its) curve farthest from the same focus S.

We know then what is the centre (of the orbit) of a planet, and what figure it describes by the areas it sweeps over; we know that every planet when it is farther from the center of its motion gravitates less towards that center. Thus the earth being nearer the sun by a thirtieth part and more, that is, twelve hundred thousand leagues, during our winter than during our summer, is more attracted in winter and thence passes more swiftly thro' her curve: for which reason we have eight days and a half more of summer than of winter, and the sun appears in the northern signs eight days and a half more than in the southern. Since then every

planet follows this law of gravitation with respect to the sun, which is the focus of its orbit; since the moon follows it with respect to the earth and all bodies in falling to the earth are subjected to it, it is demonstrated that this gravitation, this attraction, acts on all the bodies we are acquainted with.

But another powerful demonstration of this truth is the law which all the planets follow respectively in their courses and distances; which circumstance it is necessary to examine into.

CHAP. V.

Demonstration of the Laws of Gravity, from the Laws of Kepler; that one of these Laws of Kepler proves the Motion of the Earth.

Grand Rule or Law of Kepler. False Reasons given to explain this admirable Law. The true Reason of this Law discovered by Newton. Recapitulation of the Proofs of Gravitation. These Discoveries of Kepler and Newton serve to demonstrate that it is the Earth which turns about the Sun. Demonstration of the Motion of the Earth drawn from the same Laws.

KEPLER discovered this admirable rule of which I shall give an example before I proceed to define it, in order to render the things more sensible and easy.

Jupiter has four satellites, which revolve about him, the nearest is distant from his center two of his diameters and five sixths, and makes its revolution in forty-two hours; the exterior revolves about Jupiter in four hundred and two hours, I wish to know the distance of this last satellite from the center of Jupiter, to obtain it I make this rule,

As the square of forty-two hours, the revolution of the first satellite,

Is to the square of four hundred and two hours, the revolution of the exterior satellite;

I

So

So is the cube of two diameters and five-sixths,

To a fourth term:

Which fourth term being found, I extract its cube root which I find to be twelve and two-thirds; whence I answer that the distance of the fourth satellite is twelve diameters of Jupiter and two-thirds. I use the same rule for all the planets which revolve about the sun. I say, Venus revolves in 224 days, and the earth in three hundred and sixty-five; the earth is thirty millions of leagues from the sun, what is the distance of Venus? For which purpose I say,

As the square of the year of the earth

Is to the square of the year of Venus,

So is the cube of the mean distance of the earth

To a fourth term;

The cube root of which fourth term will be about twenty-one millions seven hundred thousand leagues, which makes the mean distance of Venus from the sun. The same process may be made with the Earth and Saturn, &c.

This law then is, that the square of the time of the revolution of a planet is to the square of the time of the revolution of another planet, as the cube of its distance is to the cube of the other planets distance from the common center.

Kepler who discovered this proportion was very far from discovering its cause. Less a good philosopher than an admirable astronomer, he says in the fourth book of his Epitome, that the sun has a soul, not an intelligent soul, *animus*, but a vegetating, acting soul, *animam*; that by turning on his axis he attracts the planets to him; but that the planets do not fall to the sun because they revolve on their axes. In making this revolution, says he, they at one time present to the sun a friendly side, at another time an inimical one: the friendly side is attracted, and the inimical side is repelled; whence the annual elliptical cause of the planets is produced.

It must be avowed to the humiliation of philosophy, that it was from this unphilosophical reasoning, that he

concluded that the sun ought to turn on its axis. Error conducted him by chance to truth: he guessed that the sun revolved on his axis, fifteen years before Galileo discovered it by the assistance of the telescope.

Kepler adds in his same Epitome, page 495, that the mass of the sun, the mass of the æther, and the mass of the spheres of the fixed stars are perfectly equal; and that these three are symbols of the most holy Trinity.

The reader who in perusing these elements shall see such wild reveries, and such sublime truths together in the work of so great a man as Kepler, ought not to be surprised; it is possible to be a genius in matter of calculation and observation, and yet sometimes to make a very bad use of reason in every thing else. Such minds as these have need of geometry as a staff to lean upon, and fall when they attempt to walk alone. It is not therefore astonishing that Kepler in discovering these laws of astronomy has failed in assigning their cause.

This cause is, that the centripetal force is precisely in the inverted proportion of the square of the distance of the center of motion towards which the force is directed: this must be attentively pursued. In a word, it must be understood that this law of gravitation is such that every body that is brought three times nearer the center of its motion, gravitates nine times more than before, that if it be removed three times as far off it gravitates nine times less than before; and that if it be removed an hundred times as far off it will gravitate ten thousand times less. A body moving itself circularly about a center gravitates in the inverted ratios of its actual distance from the center, and also in the direct ratio of its mass: now it is demonstrated that it is gravitation which causes it to turn about the center because otherwise it would fly off in describing the tangent. This gravitation therefore must act more strongly on a body in motion which revolves more swiftly about the center, and the further the body is removed from the centre the slower it must turn, its gravity being there much less.

Thus

Thus then is the law of gravitation in the (inverted) ratio of the squares of the distances, demonstrated:

1. By the orbit which the moon describes and by her distance from her center the earth.

2. By the course of every planet about the sun in an ellipsis.

3. By the comparison of the distances and revolutions of all the planets about their common center.

It will not be useless to observe, that this same rule of Kepler which serves to confirm Newton's discovery of gravitation, likewise confirms the system of Copernicus respecting the motion of the earth. We may say that Kepler, by this single rule, has demonstrated that which was discovered before his time, and has opened the way to those truths which a future day was to discover.

For on one hand it is demonstrated that if the law of centripetal forces did not obtain, the rule of Kepler would be impossible: and on the other hand it is demonstrated that according to the same rule, if the sun turned about the earth, we ought to say,

As the revolution of the moon about the earth in one month

Is to the supposed revolution of the sun about the earth in one year,

So is the square root of the cube of the distance of the moon from the earth

To the square root of the cube of the sun's distance from the earth.

By this calculation we should find that the sun is no more than five hundred and ten thousand leagues from us; but it is proved that he is at least thirty millions of leagues from us; thus then the motion of the earth has been strictly demonstrated by Kepler. This is another very simple demonstration drawn from the same theorems.

If the earth were the centre of motion of the sun as it is of the moon, the sun's revolution would be performed in four hundred and seventy-five years, instead of one year. For the mean distance of the sun from the

earth is to that of the moon as three hundred and thirty-seven to one, now the cube of the distance of the moon is one, and the cube of the distance of the sun is thirty-eight millions two hundred and seventy-two thousand seven hundred and fifty-three. Make use of the rule and say,

As the cube one

Is to the cube thirty-eight millions two hundred and seventy-two thousand seven hundred and fifty-three,

So is the square of twenty-eight, which is the number of days of a lunar revolution,

To a fourth number.

Whence you will find that the sun would require four hundred and seventy-five years instead of one year to turn round the earth. It is therefore demonstrated that it is the earth which turns.

It seems so much more to the purpose to place these demonstrations here, because there are still men appointed to instruct others in Italy, in Spain, and even in France, who doubt or pretend to doubt the motion of the earth.

It is then proved by the laws of Kepler and Newton that every planet gravitates towards the sun, which is the center of the orbits they describe. These laws are adhered to by the satellites of Jupiter with respect to Jupiter their center; by the moons of Saturn with respect to Saturn, and by our moon with respect to us. All these secondary planets which revolve about their primary, gravitate also towards the sun with their central planet. Thus the moon carried about the earth by the centripetal force, is at the same time attracted by the sun about which she also revolves. There is no variation in the course of the moon, in its distances from the earth, or in the form of its orbit, which sometimes approaches to an ellipsis and sometimes to a circle, &c. which is not a consequence of gravitation, according the change of her distance with respect to the earth or sun.

If she does not describe precisely equal areas in equal times in her orbit, Mr. Newton has calculated all the situations

situations or circumstances in which this inequality is found. All depend on the attraction of the sun, which attracts these two globes in the direct ratio of their masses and in the inverted ratio of their distances. We shall proceed to see that the least variation of the moon is a necessary effect of these powers combined.

C H A P. VI.

New Proofs of Attraction : the Inequalities of the Motion of the Moon's Orbit are necessarily the Effects of Attraction.

Example in Proof. Inequalities in the Course of the Moon all caused by Attraction. Deduction or Inference from these Truths. Gravitation is not the Effect of the Course or Motion of the Celestial Bodies, but that Motion is the effect of Gravitation. This Gravitation or Attraction may be a first Principle established in Nature.

THE moon has but one equable motion, which is its rotation on its axis, and is the only of her motions that is unperceived by us : it is this motion which presents to us always nearly the same face of the moon ; so that in really turning upon her axis she appears not to turn at all, and only to have a small motion of libration or vibration which she has not, but which was attributed to her by all antiquity. All her other motions are irregular, as they ought to be, if the laws of gravitation be true. The moon in her monthly course is necessarily nearer the sun in a certain point and at a certain time of her course ; now in this point and at this time her mass remains the same, her distance only being changed the attraction of the sun ought to be changed in the inverted ratio of this distance. The course of the moon ought therefore to be changed, she ought to move quicker in a given time than the attraction of the earth would alone cause her to go ; now, by the attraction of the earth, she ought to describe equal areas in equal times, as you have already seen at the Fourth Chapter.

We

We cannot help admiring the sagacity with which Newton has developed all these irregularities, and regulated the course of this planet, which had hitherto eluded all the researches of the astronomers: It is here particularly that we may say,

Nec propius fas est mortali attingere divos.

Among the examples we might choose let us select the following: Let A represent the moon (fig. 38.) ABNQ the orbit of the moon: S the sun, B the moon's place at the time of her last quarter. She is then evidently at the same distance from the sun as the earth. The difference of the directions of the gravitations of the sun and earth being neglected, their gravitations will be the same, while the earth moves in her annual course from T to V, the moon in her monthly revolution advances towards Z: now in Z it is evident that she is more attracted than the earth, as being nearer the sun S: her motion will therefore be accelerated towards N: the orbit she describes will be changed, but how? by becoming a little flattened, by approaching somewhat more to a right line from Z towards N: thus then gravitation every moment changes the moon's motion and the form of her orbit. By the same argument her course ought to be retarded, and the figure of her orbit again changed after she has passed the conjunction N, to her first quarter Q: for, since in her last quarter she accelerates her course by rendering the curve of her orbit more flat towards the conjunction N, she ought to retard this same course in returning from the conjunction towards her first quarter. But when the moon proceeds from this first quarter towards her full A, she is therefore farther from the sun which attracts her less, whence she gravitates more towards the earth. Then the moon accelerating her motion, the curve she describes is again a little flattened as at the conjunction; and this is the only reason why the moon is farther from us in her quarters than in her conjunction and opposition. The curve she describes is a species of oval approaching to a circle.

Thus then the course of this planet ought every instant to vary by the action of the sun from whom her distance is ever varying.

She

She has her apogee and perigee, her greatest and least distance from the earth; but the points or places of this apogee and this perigee ought to change. She has her nodes, that is to say, the points where her orbit precisely meets with or intersects the orbit of the earth; but these nodes or points of intersection ought also to change; she has her equator inclined to the equator of the earth, but this equator sometimes more and sometimes less attracted ought to change its inclination.

She follows the earth notwithstanding all these varieties; she accompanies it in the annual revolution; but the earth in this course is a million of leagues nearer the sun in winter than in summer. What happens in consequence of this, independent of all the other variations? The attraction of the earth acts more fully on the moon in summer: the moon at that time finishes her revolution rather sooner; but in winter the earth, on the contrary, being itself more strongly attracted by the sun, and moving more rapidly than in summer, suffers the moon's motion to diminish, and the lunar months in winter are a little longer than in summer. The little we have said may serve to give a general idea of these changes.

If any one should here make the objection which I have sometimes heard proposed, how the moon being more attracted by the sun does not then fall towards it? it is only to be considered that the force of gravitation which directs the moon about the earth is here only diminished by the action of the sun.

From these inequalities in the course of the moon, which are caused by attraction, you will justly conclude, that any two planets sufficiently near and of bulk sufficient to act on each other can never turn in circles about the sun, nor even in ellipses absolutely regular. Thus the curves which Jupiter and Saturn describe are, for example, subject to sensible variations when these stars are in conjunction; when, being the nearest each other that is possible, and the farthest from the sun, their mutual action is increased and that of the sun diminished.

This

This gravitation increased or diminished according to the distance would therefore necessarily assign an irregular elliptic figure to the orbits of most of the planets; so that the law of gravitation is not the effect of the course of the stars, but the orbits they describe are the effects of gravitation. If this gravitation were not as it is in the inverted ratio of the square of the distance, the universe could not subsist in the order in which it is.

If the satellites of Jupiter and Saturn make their revolutions in orbits, which approach nearer to circles, it is because being very near those great planets that are their centers, and very far from the sun, his action cannot change the course of these satellites, as it does that of our moon. It is therefore proved that gravitation, whose name alone seemed a strange paradox, is a necessary law in the constitution of the world; so much is that true which sometimes appears improbable.

There is no good philosopher who does not now acknowledge the rule of Kepler, and the necessity of admitting a gravitation such as Newton has demonstrated: but there are still philosophers who, attached to their vortices of subtile matter, wish to reconcile these imaginary vortices with these demonstrated truths. We have already seen how inadmissible these vortices are; but does not this gravitation itself afford a new demonstration against them? For supposing these vortices to exist, they could not revolve about a center, but by means of this very gravitation: it would therefore be necessary to recur to this gravitation as the cause of these vortices; and not to these pretended vortices as the cause of gravitation.

If being at length under the necessity of abandoning these imaginary vortices, they are reduced to say that this gravitation, this attraction, depends on some other unknown cause, on some other secret property of matter, that may, doubtless, be true; but this other property must itself either be the effect of another property, or else is a primordial cause, a principle established by the author of nature; now, why should not attraction itself be this first principle? Newton, at the end of his Optics
says,

says, that perhaps this attraction may be the effect of an extremely rare and elastic spirit diffused through all nature; but then, from whence is this elasticity to arise? Would not it be as difficult to comprehend, as gravitation, attraction, or a centripetal force? This force is demonstrated to me; the elastic spirit is scarce suspected. Here then I hold; and cannot admit a principle of which I have not the smallest proof, to explain a true and incomprehensible attribute, whose existence nature demonstrates to me.

C H A P. VII.

New Proofs and new Effects of Gravitation: that this Power is in every Part of Matter: Discovers dependant on this Principle.

A general and important Observation concerning the Principle of Attraction. Gravitation or Attraction is in all the Parts of Matter equally. A sublime and admirable Calculation of Newton.

WE may gather from all these demonstrations, that the centripetal force, attraction, gravitation is the undoubted principle of the courses of the planets, of the fall of bodies, and of that weight which we perceive in all bodies. This centripetal force causes the sun to gravitate towards the center of the planets, as the planets gravitate towards the sun, and attracts the moon towards the earth, as well as the earth towards the moon. One of the first laws of motion is a new demonstration of this truth: this law is, that action is equal to re-action; whence the sun gravitates to the planets, and the planets to the sun; and we shall see at the beginning of the next chapter how this grand law operates. Now this gravitation acting necessarily in the direct ratio of the mass, and the sun being about four hundred and sixty-four times larger than all the planets put together, the moons of Jupiter and Saturn, and the ring of Saturn excepted,
it

it is necessary that the sun should be (very nearly) their center of gravitation; whence they must turn about the sun.

It is always carefully to be remembered, that when we say that the power of gravitation acts in the direct ratio of the masses, we always understand that it acts so much the more on any body, as that body has more parts; which we have proved, by shewing that a straw descends as quick in an exhausted receiver as a pound of gold. We have said, abstracting from the small resistance of the air, that a ball of lead for example, falls towards the earth fifteen feet in a second; we have demonstrated that the same ball would fall fifteen feet in a minute, if it would, removed to the distance of sixty radii from the earth as is the moon; therefore the power of the earth on the moon, is to its power on a ball of lead transported to the same elevation, as the solid body of the moon is to the solid body of the little ball. In this proportion it is, that the sun acts on all the planets; it attracts Jupiter and Saturn and their moons, in the direct ratio of the solid matter which is in those moons, and that which is in their primaries.

Hence is deduced an incontestable truth, that this gravitation is not only in the whole mass of every planet, but in every part of this mass; and that consequently there is not an atom of matter in the universe which is not endued with this property.

We chuse here the most simple matter, of which Newton has demonstrated that this attraction is equally in every atom thereof. If all the parts of a globe did not equally possess this property, if some parts possessed it more strongly and others more weakly, the planet in turning on its axis, would necessarily present at one time the strong side, and at another the weak one at an equal distance, whence the same body at a like distance, and in all possible circumstances, would at one time experience one degree of gravitation, and another at another; the law of the inverted ratio of the squares of the distances, and the law of Kepler would be always prevented from obtaining: but this does not happen; therefore, there is
not

not in all the planets any part that gravitates less than another. Here follows yet another demonstration: If there were bodies in which this property was different, there would be some bodies which would fall more slowly and others more quickly in the vacuum; now all these bodies fall in the same time, all pendulums, even in the air, make equal vibrations at equal lengths; pendulums of gold, silver, iron, wood, and glass make their vibrations in equal times; therefore all bodies have this property of gravitation precisely in the same degree, that is to say, precisely as their masses, so that gravitation acts on an hundred atoms in the ratio of one hundred, and on ten atoms in the ratio of ten.

From one truth to another, we rise insensibly to parts of knowledge, which seemed to be out of the sphere of the human understanding. Newton has dared to calculate merely by the help of the laws of gravitation, what ought to be the weight of bodies on other planets than ours: what the body which we call a pound ought to weigh in Saturn or the Sun: and as these different weights depend directly on the masses of the globes, it was necessary that he should calculate the masses of these stars. Let any one after this say, that gravitation or attraction is an occult quality; let him presume to call by this name, as universal law that conducts to discoveries so astonishing.

C H A P. VIII.

The Theory of the planetary World.

Demonstration of the Motion of the Earth about the Sun, drawn from Gravitation. Magnitude of the Sun. He turns on himself about the common Center of the planetary World. He continually changes his Place. His Density. in what Proportion Bodies fall at the Sun. Newton's Idea of the Density of the Planet Mercury. Prediction of Copernicus respecting the Phases of Venus.

The S U N.

THE sun is in the center of our planetary world, and ought necessarily to be so. This is not to say that the center of the sun is precisely the center of the universe; but this central point to which our universe gravitates is necessarily in the body of this star; and all the planets having once received the projectile motion, ought to revolve about this point which is in the sun; here follows the proof:

Let the greater of the globes A and B represent the sun (fig. 39.) and the smaller any other planet whatsoever. If they be both left to the laws of gravitation, and free from all other motion, they will be attracted in the direct ratio of their masses: they will be determined in a perpendicular line to each other; and A being a million times larger than B, will move a million times more swift (flow) than B will move towards A. But when they have each a projectile motion impressed on them in the ratio of their masses (or rather equal in each) the planet in the direction of BC, and the sun in the direction of AD, the planet then obeys the two motions; it follows the line BC and at the same time, and gravitates towards the sun in the line BA; it will therefore pass through the line or curve BF; the sun in like manner will pass along the curve AE; and gravitating towards each other they will turn about a common center.

But

But the sun exceeding the earth in magnitude a million times, and the curve AE which it describes being a million times smaller than that which the earth describes, the common center is necessarily almost in the middle of the sun.

This affords yet another demonstration, that the earth and planets turn about the sun; and this demonstration is so much the more admirable and convincing, as it is independant of all observation, and founded on the primordial mechanism of the world.

If we state the diameter of the sun as equal to one hundred diameters of the earth, and if consequently it exceed the earth a million times in magnitude, it will be four hundred and sixty-four times larger than all the planets together, without including Jupiter's moons and the ring of Saturn. He gravitates towards the planets, and causes them to gravitate towards him; it is this gravitation that causes them to revolve by drawing them beneath the tangent, and the attraction which the sun exerts on them, exceeds that which they exert on him, as much as he exceeds them in quantity of matter. You are not to forget that this reciprocal attraction is nothing else but the law of all gravitating bodies in motion, and turning about a common center.

The sun then turns on this common center, that is to say, on his own axis in twenty-five days and a half; his middle point is always at a small distance from the common center of gravity, and the body of the sun departs from that center, in proportion as a greater number of planets in conjunction attract him towards them: but if all the planets were on one side and the sun on the other, the common center of gravity of the planetary world would scarcely be out of the sun, and all their forces united would scarce derange or remove the sun a whole diameter. He therefore in reality changes his place every moment, according as he is more or less attracted by the planets, and this small motion of the sun re-establishes (or diminishes) the derangement which the mutual actions of the planets on each other must occasion.

sion. So that the continual motions of this star maintain the order of nature.

Tho' the sun exceeds the earth a million times in magnitude, he has not a million times the quantity of matter. If he were really a million times more solid or full than the earth, the order of the world would not be as it is. For the revolutions of the planets and their distances from the center depend on their gravitation, and their gravitation is in the direct ratio of the quantity of matter contained by the globe which is in their center: therefore, if the sun exceeded our earth and moon in such a degree in solid matter, the planets would be much more attracted, and their ellipses much more deranged.

In the second place, the matter of the sun cannot be as his magnitude; for this globe being all on fire, its rarefaction must necessarily be great, and his mass so much the less as his rarefaction is greater. From the laws of gravitation it appears, that the sun possesses only two hundred and fifty thousand times as much matter as the earth; now, the sun being a million times larger, has only a quarter of a million more matter; earth therefore, though a million times less in magnitude, has in proportion four times as much matter as the sun, or is four times as dense.

The same body in this case, which weighs a pound at the surface of the earth, would weigh thirty-five pounds at the surface of the sun; but the proportion is twenty-four to one, because the earth is not exactly four times as dense, and the diameter of the sun is here supposed to be one hundred times that of the earth. The same body which here falls fifteen feet in the first second, will fall about four hundred and fifteen feet in the first second at the surface of the sun, *cæteris paribus*.

The sun continually loses according to Newton, a small part of his substance, and would after a course of ages be reduced to nothing, if the comets which fall from time to time into his orb did not serve to repair his losses; for every thing in the universe is subject to alteration and diffusion.

MERCURY.

M E R C U R Y.

From the sun to the distance of eleven or twelve millions of our leagues or thereabouts, no globe or planet is observed. At the distance of eleven or twelve millions of our leagues or thereabouts from the sun, is Mercury at his mean distance. He is the most excentric of all the planets, and revolves in an ellipsis which brings him in his perihelium almost a third nearer than in his aphelium.

Mercury is near twenty-seven times less than the earth; he revolves about the sun in eighty-eight days, which make his year.

The revolution on his axis which makes his day is unknown, and we want means to assign either his weight or his density. We only know that if Mercury be an earth exactly like ours, it is necessary that his matter be about eight times as dense, in order to prevent that effervescence which would destroy in an instant animals of our species, and would evaporate every substance that is of the consistence of the water on our globe.

Here follows the proof of this assertion. Mercury receives about seven times as much light as we. For he is two and one-third times nearer the sun than we, and light increases as the squares of the distances decrease: therefore, all other things alike, he is seven times more heated. Now on our earth, the greatest summer heat being about seven or eight times increased, makes water immediately boil with violence; it would therefore be necessary that every thing should be about seven times more dense than it is, in order to resist seven or eight times more heat than the most scorching summer produces in our climates. Therefore, Mercury ought to be at least seven or eight times more dense, in order to admit of the subsistence of the same things, other circumstances remaining the same. We may add, that since Mercury receives about seven times the quantity of rays that our earth does, because he is about two and two-thirds nearer, the sun ought by the same argument to appear about seven times larger when viewed from Mercury, than when seen from our earth.

V E N U S.

After Mercury is Venus, at twenty-one or twenty-two millions from the sun at her mean distance: her magnitude is equal to that of the earth, and her year is two hundred and twenty-four days. It is not yet known how long her day is, that is to say, her revolution on her axis. Very eminent astronomers affirm, that her day consists of five and twenty hours, others think it consists of twenty-five of our days. Observations have not been made sufficiently sure to determine where the error lies; but this error, at all events, is no more than a mistake of the sight, and not an error in reasoning.

The ellipsis that Venus describes, is less excentric than that of Mercury (fig. 40.) An idea of the paths of these planets about the sun may be formed from this figure.

It is not from the purpose to observe here, that Venus and Mercury have different phases with respect to us as well as the moon. Copernicus was once reproached that in his system these phases ought to appear, and his system was concluded to be false because they were not seen.

If Venus and Mercury, said his antagonists, turn about the sun, and we turn in a larger circle, we ought to behold Mercury and Venus sometimes full and sometimes in the form of a crescent, &c. but this is what we never see. It is what happens, nevertheless replied Copernicus, and you will see it if you should ever discover a method of rendering your sight more perfect. The invention of telescopes, and the observations of Galileo served soon after to accomplish the prediction of Copernicus. Finally, we cannot assign either the mass of Venus or the weight of bodies at her surface.

C H A P. IX.

The Theory of the Earth: An Inquiry into its Figure.

I Shall speak more at large on the theory of the earth. I shall first examine its figure which necessarily arises from the laws of gravity and its rotation on its axis. I shall

shall next explain its motions and shall finish this theory of our globe by the most evident proofs of the cause of tides, an inexplicable phenomenon till the time of Newton, but which is now the most striking testimony of the truths he has taught. I begin with the form of our globe.

Of the Figure of the Earth.

History of the Opinions concerning the Figure of the Earth.
Discovery of Richer and its Consequences. Theory of Huygens. Theory of Newton. Dispute in France concerning the Figure of the Earth.

THE first astronomers in Asia and Egypt soon perceived by the projection of the shadow of the earth, in lunar eclipses, that it was round: The Hebrews, who were very bad philosophers, imagined it to be flat: they figured to themselves the heavens as a half girdle or sphere covering the earth, of which they know neither the form nor magnitude, but of which they hoped sooner or later to be the masters. This idea of a narrow and flat earth has for a long time prevailed among christians; among many of the doctors of the fifteenth century it was received that the earth was flat and long from east to west, and very narrow from north to south. A bishop of Avila, who wrote at that time, treats the contrary opinion as heresy and absurdity. At length reason and the voyage of Christopher Columbus restored to the earth its ancient spherical form. From one extreme they then passed to another: the earth was thought to be a perfect sphere; as it was then believed that the planets made their revolutions in perfect circles.

Nevertheless, as soon as any one had began to be well convinced that our earth turns on its axis in twenty-four hours, he might have judged by that alone that a form perfectly spherical could not belong to it. For not only the centrifugal force considerably raises the

waters in the region of the equator by the motion of rotation in twenty-four hours; but they are yet more elevated about five and twenty feet twice in each day by the tides; it would therefore be impossible that the lands towards the equator should not be perpetually under water. Now this is not the case and therefore the region of the equator is much more elevated in proportion than the rest of the earth and consequently the earth is a spheroid elevated at the equator and cannot be a perfect sphere. This proof, tho' so simple, had escaped the greatest geniuses because an universal prejudice seldom admits of examination.

It is known that in 1762, Richer, in a voyage to Cayenne near the line, undertaken by order of Louis XIV. under the auspices of Colbert the father of all the arts; Richer, I say, among many other observations found that the pendulum of his clock did not make its oscillations or vibrations as frequent as in the latitude of Paris, and that it was absolutely necessary to shorten the pendulum more than a line and a quarter. Natural philosophy and geometry were not then near so much cultivated as they are at present; what man could have believed that from a remark so trifling in appearance, from a line more or less the greatest physical truths might be extracted? It was immediately found that gravity ought necessarily to be less under the equator than in our latitude, because it is gravity alone that causes the vibration of a pendulum. And consequently since the weights of bodies are so much less as the bodies are more distant from the centre of the earth, it is absolutely necessary that the region of the equator should be much more elevated than ours, or more distant from the center; therefore the earth cannot be a true sphere.

Many philosophers acted with respect to these discoveries as most men do when required to change their opinion; the truth of Richer's experiment was disputed; it was pretended that our pendulums do not make their vibrations less quick near the equator on any other account than the lengthening of the metal by heat: but it is
seen

seen the heat of the most fervid summer lengthens it a line in thirty feet : and in the present affair the enquiry was respecting an increase of a line and a quarter, a line and a half, or even two lines, in a rod of iron of three feet eight inches.

Some years after Messrs. Varin, Deshayes, Feuillé, and Couplet repeated the same experiment of the pendulum near the equator, and found that it was always necessary to shorten the rod, tho' the heat was often less under the line itself than at fifteen or twenty degrees of latitude. This experiment has been * lately confirmed by the academicians which Louis XV. has sent to Peru, who were obliged near Quito, on the mountains where it froze, to shorten the pendulum of seconds about two lines.

Nearly at the same time the academicians who went to measure an arc of the meridian to the north, found that at Pello, beyond the polar circle, it was necessary to lengthen the pendulum to have the same oscillations as at Paris ; consequently the gravitation of bodies is greater at the polar circle than in the climates of France, as it is greater in our climates than towards the equator. If gravity be greater towards the north, the north is then nearer the center of the earth than the equator, therefore the earth is flatted towards the poles.

Never did reason and experience concur with such exactness to prove a truth. The celebrated Huyghens by the calculation of centrifugal forces had proved that gravity ought to be less at the equator than at the polar regions, and consequently that the earth ought to be a spheroid flattened at the poles. Newton, by the principles of attraction, had made a conclusion which nearly agreed with that of Huyghens ; we must only observe that the force inherent in bodies which determines them towards the center of the globe, the primitive gravity was thought by Huyghens to be every where the same. He had not at that time seen the discoveries of Newton, and therefore considered no other diminution

* This was written in 1736. V.

of gravity than that which arises from the centrifugal force. The effect of the centrifugal forces diminishes the primitive gravity under the equator. The smaller these circles in which the centrifugal force acts become the more that force gives place to that of gravity; so that at the pole itself the centrifugal force which is nothing ought to leave the primitive gravity all its action. But this principle of a gravity always equal, falls to destruction by the discovery that Newton has made and of which we have spoken so much in the course of this work, namely, that a body transported, for example, to the distance of ten diameters from the center of the earth weighs an hundred times less than at the distance of one diameter.

It is then by the laws of gravitation combined with that of the centrifugal force, that the true figure which the earth ought to have is shewn. Newton and Gregory were so sure of this theory, that they did not scruple to affirm that the experiments on weight were a more sure means of obtaining the figure of the earth than any geographical measurement.

Louis XIV. had signalized his reign by that meridian line which is drawn across France; the illustrious Dominic Cassini had begun it, assisted by his son; in 1701, he had drawn from the foot of the Pyrenean mountains, a line as strait as was possible, tho' obstacles almost insurmountable; the height of mountains, the changes of the refraction of the air, and the alterations of the instruments continually opposed the progress of this vast and delicate enterprise. In 1701, then he had measured six degrees eighteen minutes of this meridian. But, by whatever means the error was produced, he found the degrees towards Paris, that is to say to the north, shorter than those which adjoined to the Pyrenean mountains to the southward: this admeasurement contradicted both the measure of Norwood and the new theory of the earth flattened at the poles. Nevertheless this new theory began to be so well received that the secretary of the academy in his history of 1701, did not hesitate to say that the measures newly taken in France, proved that the earth

is

is a spheroid whose poles are flattened. The measures of Dominic Cassini in reality led to a conclusion that was quite the reverse; but as the figure of the earth had not then become a question in France, no one at that time opposed this false conclusion. The degrees of the meridian from Collicure to Paris were esteemed exactly measured, and the pole, which by these measures ought necessarily to have been elevated or elongated, passed for flat.

Mr. des Roubais, an engineer, astonished at this conclusion demonstrated that by the measures taken in France, the earth ought to be an oblong spheroid whose meridian or great circle passes thro' the poles is longer than the equator. and whose poles are elongated. But of all the philosophers to whom he addressed his dissertation, no one would print it because it appeared that the academy had given sentence on the subject, and it seemed too rash for an individual to oppose it. Some time after, the error of 1701 was acknowledged; a recantation was made, and the earth was pronounced to be oblong by a just conclusion drawn from false principles. The meridian was continued on this principle from Paris to Dunkirk, and the degrees were continually found to be less in going to the northward. About the same time certain mathematicians who were employed about the same business in China, were astonished to see a difference between their degrees, which they supposed ought to have been equal, and to find them after repeated trials to be shorter towards the north than the south. This agreement between the mathematicians in France and in China, was yet a more powerful reason for believing that the earth was oblong. But still more was done in France, parallels to the equator were measured. It is easy to comprehend that in an oblong spheroid our degrees of longitude ought to be less than on a sphere. Mr. de Cassini found the parallel that passes thro' St. Maloes to be shorter by one thousand and thirty-seven toises, than it ought to be on the hypothesis of a spherical earth. This degree was then incomparably too short if the supposition of an oblong sphere be not admitted.

All these false measures proved that those who took them had found degrees just as they wished to find them: they overthrew for a time in France the demonstration of Newton and Huyghens, and it was not doubted but the poles were of a figure quite opposite to that which had been formerly believed.

At length the new academicians, who went to the polar circle in 1736, having by other measures seen that the degree in those climates was much longer than in France, it was thought that either they or Mr. Cassini had made a mistake. But soon after, the business was determined, for the same astronomers who returned from the pole examined again the degree which was measured to the northward of Paris in 1677 by Picard. They proved that this degree is one hundred and twenty-three toises longer than Picard had determined it. If therefore Picard with all his precautions had made this degree one hundred and twenty-three toises too short, it was highly probable that they who afterwards measured the degrees to the southward, might have found them longer than they ought to have been. So that the first error of Picard which served as the foundation to the measures of the meridian served likewise as an excuse for the almost unavoidable errors which the best astronomers might commit in this grand work. The academicians returned from the pole had both theory and practice in their favour in this dispute. Both the one and the other were confirmed by an acknowledgment which the grandson of the illustrious Cassini, the inheritor of the merit of his father and grandfather, made at the academy in 1740. He had obtained the measure of a parallel at the equator, and avowed that at length this measure taken with all the care which the dispute required gave the earth oblate. This candid acknowledgment ought to terminate the contest honorably for all parties. By the number of different measures, it is seen how easy it is to be deceived. The thickness of a hair on our planet answers to millions of leagues in the heavens. Newton was better assured of the flatness of the poles by his demonstrations, than we can be of the quantity of this flatness by the help of the best quadrants.

Lastly

Lastly, the difference between a sphere and spheroid, does not give a circumference either greater or less: for a circle changed into an oval neither increases nor diminishes the superficies. As to the difference between one axis and the other, it is not seven leagues. An immense difference for those who enlist with a party, but inconsiderable for those who consider the measures of the terrestrial globe in no other light than that which respects their utility. There is no geographer who can make this difference sensible in a chart, nor any navigator who can perceive whether he makes his course on a sphere or a spheroid. But the difference between those who made the sphere oblong, and those who made it oblate was about one hundred leagues, which is a magnitude sufficient to be of consequence to navigation.

C H A P. X.

Of the Period of Twenty-five Thousand Nine Hundred and Twenty Years, which is caused by Attraction.

General Misapplication of Terms in the Language of Astronomy. History of the Discovery of this Period. Not very favourable to the Chronology of Newton. Explanation given by the Greeks. Enquiries respecting the Cause of this Period.

IF the figure of the earth be an effect of gravitation or attraction, this powerful principle of nature is likewise the cause of all the motions of the earth in its annual course. In this course the earth has a motion whose period is completed in near twenty-six thousand years: this period is called the precession of the equinoxes; but in order to explain this motion and its cause, it is necessary to trace things somewhat farther back.

The common language in matters of astronomy, is but one continued perversion of truth. We say that the stars make their revolutions about the equator, that the
sun

sun turns every day with them about the earth from east to west; that in the mean time the stars by another motion opposite to that of the sun, turn slowly from west to east; that the planets are stationary and retrograde. No part of all this is true, as we know that these appearances are caused by the motion of the earth. But we express ourselves always as if the earth was immoveable, and the vulgar language is retained, because the language of truth would too much contradict our eyes, and prejudices still more deceiving than them.

But astronomers never express themselves in a manner that less agrees with truth, than when they say in all the almanacks: *the sun at the beginning of spring enters into such a degree in Aries; the summer begins with the sign of Cancer; Autumn with the balance.* It is long since all these signs have had new places in the heavens with respect to our seasons. It is time to change our manner of speaking as it must one day be changed: for in reality, our spring begins when the sun rises with the bull, our summer with *Leo*, our autumn with *Scorpio*, and our winter with *Aquarius*; or to speak more exactly, our seasons begin when the earth in her annual course, is in the signs opposite to those which rise with the sun.

Hipparchus was the first among the Grecians, who perceived that the sun no longer rose in the spring in the the signs in which he had formerly risen. This astronomer lived about sixty years before the commencement of our vulgar era; a discovery of this nature being made so late, and which ought to have been made long before, proves that the Greeks had made no great progress in astronomy. It is reckoned, but it is on the report of a single author of the tenth century, that at the time of the expedition of the Argonauts, Chiron the astronomer fixed the beginning of spring, that is to say, the point at which the earth's ecliptic or orbit intersects its equator to the fifteenth degree of Aries. It is certain, that above five hundred years after Meton and Euctemon observed that the sun at the beginning of summer, entered into the eighth degree of Cancer, and consequently the vernal equinox was no longer at the fifteenth degree of Aries, and

and the sun was advanced seven degrees towards the east since the expedition of the Argonauts. It is upon these observations made five hundred years after by Meton and Euctemon, a year before the Peloponnesian war, that Newton has founded part of his system for the reformation of all chronology; and on this subject I cannot help submitting my doubts to the inspection of enlightened men.

It seems to me, that if Meton and Euctemon had found so considerable a difference as seven degrees between the place of the sun in the time of Chiron, and that in the time in which they lived, they could not have avoided discovering the precession of the equinox, and the period resulting from thence. Nothing more was necessary, than to make use of the rule of three and say; if the sun advance about seven degrees in five hundred and odd years, in how many years will he complete the entire circle? By which means the period would have been discovered. Nevertheless, it was intirely unknown till the time of Hipparchus. This silence makes me think that Chiron did not know so much as is reported of him, and that it was not till after the discovery that it was believed that he had fixed the equinox at the fifteenth degree of *Aries*. It was imagined that he did it, because he ought to have done it. *Ptolemy* mentions nothing of it in his *Almagest*: and this consideration may, in my opinion, in some degree shake the Chronology of Newton.

It was not by the observations of Chiron, but by those of Aristillus and Meton compared with his own, that Hipparchus began to suspect a new vicissitude in the course of the sun. *Ptolemy* more than two hundred years after Hipparchus, was assured of the fact but confusedly. It was thought that this revolution was a degree in an hundred years; and after this false calculation it was, that the great year of the world was composed of thirty-six thousand years. But this motion is really a degree in about seventy-two years, and the period is only twenty-five thousand nine hundred and twenty years according to the best received computations. The
Grecians

Grecians who had no notion of the ancient system formerly known in Asia, and revived by Copernicus, were far from suspecting that this period belonged to the earth. They imagined a certain unintelligible *primum mobile*, which carried all the stars, planets, and the sun, in twenty-four hours about the earth; next a crystalline heaven which turned slowly from west to east in thirty-six thousand years, and which caused the stars to move retrograde notwithstanding the *primum mobile*; all the other planets and the sun itself made their annual revolution, each in its crystalline heaven; and these imaginations they called philosophy. At length it was discovered in the last century, that this precession of the equinoxes, this long period, arises from a motion of the earth, whose equator from year to year, intersects the ecliptic in different points, as we shall proceed to explain.

Before we explain and shew the cause of this motion, I may be allowed to enquire into the reason or final purpose of this period.

However daring it may seem to determine the reasons of the Creator, we seem at least excusable in presuming to say, that we guess or divine the utility of the other motions of our globe.

If the globe passes through in the space of a year in its grand orbit, an hundred and ninety-eight millions of leagues at least, this course gives us the seasons. If it turns on its axis in four and twenty hours, the distribution of days and nights is probably one of the objects for which this rotation was constituted by the author of nature. It appears to me that there is yet another necessary reason for this daily motion, which is, that if the earth did not turn upon its axis, it would have no centrifugal force, and all its parts being pressed towards the center, by the centripetal force, would acquire an adhesion or invincible hardness which would render our globe barren.

In a word, we easily comprehend the utility of all the other motions of the earth; but with respect to this motion of the pole in twenty-five thousand nine hundred and

and twenty years, I can discover no sensible use. From this motion it happens, that our pole star will one day cease to be our pole star, and it is proved that it has not always been such: the equinoxes and the solstices change; the sun with respect to us is no longer in Aries at the vernal equinox, tho' all the almanacs affirm it; he is in Taurus, and in time will be in Aquarius. But of what consequence is this? This mutation produces neither new seasons, nor a new distribution of heat and light, every thing in nature rests sensibly the same. What then is the cause or purpose of this period of twenty-five thousand nine hundred and twenty years, so long and at the same time so useless in appearance?

In every compounded machine that we see, there is always some effect which of itself does not produce the utility which we receive from the machine, but which is a necessary consequence of its composition; for example, in a water-mill a great part of the water which falls on the ladles of the wheel is lost; this water which the motion of the wheel scatters on all sides is of no service to the principal intention of the machine, but is an indispensable effect of the motion of the wheel. The noise which a hammer makes, has nothing in common with the body it fashions upon the anvil; but it is impossible that the concussion of the anvil should not accompany that action. The vapor which exhales from a liquid which we cause to boil, escapes necessarily, without contributing at all to the use to which the liquor is applied; and he who concludes that all these effects are necessary, though they are often of no sensible use, will judge well.

If it be for a moment permitted for us to compare the works of God with our imperfect works, we might say that in this immense machine, he has arranged things so that many effects follow indispensably, without nevertheless being of any utility to us. This period of twenty-five thousand nine hundred and twenty years appears to come perfectly under this denomination, it is a necessary effect of the sun and moon's attraction.

In

In order to form a clear idea of this periodical motion of twenty-five thousand nine hundred and twenty years, let us conceive the earth (fig. 41.) to be carried annually on its great axis AB, parallel to itself, about the sun. This axis carried from west to east seems always to be directed to the pole star; the earth in half her course, that is, if you will, from spring to autumn, has passed thro' about ninety-eight millions of leagues; but this space is nothing with respect to the extreme distance of this star, which would always have the same relative position to the axis of the earth, if that axis always continued in the same position of parallelism AB which you see. But this axis does not continue in that position, but at the end of a great number of years is no longer in the situation AB with respect to the ecliptic. Therefore being no longer parallel to its first position, it ceases to be directed to the pole star. This difference is inconsiderable with respect to the vast extent of the skies; but of importance with respect to the motion of our pole.

Imagine then this little globe of earth making its very small revolution of about one hundred and ninety-eight millions of leagues, which is no more than a point in the immense space which contains the fixed stars. Its pole, which answers to the pole star in P (fig. 42.) at the end of seventy-two years, will be a degree distant from it. In six thousand five hundred years, the pole will refer to the star T, and at the end of thirteen thousand years it will answer to the star Z; whence it will proceed to S, and will return to P, so that at the end of twenty-five thousand nine hundred and twenty years, we shall have the same pole star as at present.

After having explained the manner of this revolution of the earth's axis, it will be easy to know the physical cause. We must remember, that in speaking of the inequalities of the course of the moon, Newton has demonstrated that they all depend on the attractions of the sun and the earth combined together. It is this attraction, this gravitation, that continually changes the position of the moon, as has been seen at Chapter VI. in return, the attractions of the sun and moon acting
upon

upon the earth, continually change the position of our globe. We are not to forget that the earth is much higher at the equator than towards the poles. Suppose (fig. 43.) T to be the earth, L the moon, and S the sun. If the earth and moon turned always in the plane of the equator, it is evident that the elevated part of the earth DE would be always equally attracted; but when the earth is not in the equinoxes, the elevated part E for example, is attracted by the sun and moon, which I suppose to be in the situation here represented. Then the same thing will happen to it that happens to a bowl when unequally charged, it will vacillate or librate from side to side. Conceive the part D to fall towards the sun E, by the attraction of the sun; it cannot go from D to E, but at the same time the pole P will change its situation, and pass from P to Z; but the pole cannot pass from P to Z, without the equator answering to another part of the heavens than it did before: so that the equinoctial and solstitial points successively answer in the course of seventy-two years, to a place, a degree different in situation in the heavens. So the equinox formerly before the time of Hipparchus, happened when the sun appeared to be in the first point of Aries, and the same equinox happens at present when the sun appears to be in Taurus, that is, when the earth is in Scorpio, the sign opposite to Taurus. By which means all the constellations have changed place, Taurus is in the place (of the ecliptic) which Aries formerly possessed, Gemini is in the place of Taurus, &c.

This gravitation, which is the only cause of this revolution of twenty-five thousand nine hundred and twenty years in our globe, is likewise the cause of the lunar revolution of nineteen years, which is called the lunar cycle, and of the revolution of the moon's nodes in nine years. The same thing precisely happens to the moon in her revolution about the earth, as to this elevation of our globe towards the equator, so that we may consider the moon as if it were an elevation or ring appertaining to our earth, and in like manner we may consider the elevation at the equator, at a ring or annulus of moons.

It

It is easily perceived that the sun must have much more influence on the motion of the Earth, which causes the precession of the equinoxes, than the moon. The action of the sun in this case is precisely to that of the moon, as the action of the moon in the case of the tides is to that of the sun.

The reader will doubtless suspect that since the sea is elevated about the equator, the sun and the moon, which act upon this equator must act more sensibly on the tides. The sun contributes to the motion of the equinoxes nearly as three and the moon as one. In the tides on the contrary the sun acts but as one and the moon as three; an astonishing calculation reserved for our age and which perfectly agrees with the laws of that gravitation which nature conspires to demonstrate.

C H A P. XI.

Of the Flux and Reflux of the Sea. That this Phenomenon is a necessary Consequence of Gravitation.

The pretended Vortices cannot be the Cause of Tides. Proof.
Gravitation is the only evident Cause of Tides.

IF the vortices of subtile matter have ever had a shadow of probability in their favor, it is the flux and reflux of the ocean. That the waters are depressed under the tropics while they are elevated at the poles is, say they, because the air presses them under the tropics. But why does the air press there more than elsewhere? Because it is itself more pressed, because the road or place of the passage of the subtile matter is contracted by the passage of the moon; and what still more confirms this probability is that the tides are higher at the new and full moon than at the quadratures; and lastly, that the return of the tide to any meridian nearly follows the return of the moon to that same meridian. This, notwithstanding the appearance of probability it carries, is nevertheless impossible in reality. We have already
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shewn

shewn that this vortex of subtile matter cannot subsist; but supposing it to exist in spite of all the contradictions that overthrow it, it can in no manner be the cause of the tides.

1. In the supposition of this pretended vortex of subtile matter, all the lines must press equally towards the center of our globe; so that the moon ought to press equally in her quarters and at her full. Whence there would be no tides.

2. By an argument equally strong, no body carried in a fluid can press the fluid more than an equal of the fluid substituted in its place would do; a body in equilibrio in the water supplies the place of an equal quantity of the water. Whether we put into a fishpond one hundred additional cubic feet of water, or one hundred fishes that swim under water, of a cubic foot each; or whether we put one fish, with ninety-nine additional cubic feet of water, the effect is absolutely equal; the bottom of the pond will be neither more nor less charged in any one of these cases than any other; so that whether there be one moon above the sea or an hundred, it is absolutely equal in the imaginary system of vortices and a plenum; none of these moons ought to be considered but as an equal quantity of the fluid matter.

3. Flood-tide happens at the circumference of the ocean at the opposite points of the same meridian at the same time; the sea (fig. 44.) is depressed at the same time at A and B. Now supposing that the moon could press the pretended torrents of subtile matter on the ocean A, the water would rise at B instead of being depressed; for gravitation towards the center in this system is the effect of the pretended subtile matter. Now this imaginary fluid pressing at A on the waters of the earth, ought to elevate the water on which it presses least; now on what part of the water does it press less than at B? What are we to understand when we are told, that B is depressed likewise by the return of the same stroke? How long has it happened that when we strike a body on any one side it will be indented on the opposite side? Press a bladder full of air, will it be hollowed or rendered

concave on one side when you press the other? Will it not rather be elevated at the side opposite to the part struck?

4. If this imaginary pressure existed would not the air, pressed between the tropics, cause the Mercury in the barometer to rise? But on the contrary, the Mercury is always somewhat lower in the torrid zone than towards the poles. Therefore that which appeared so probable, becomes impossible upon examination.

Gravitation, this principle so well known and demonstrated, this force so inherent in all bodies, displays itself here in a very sensible manner: it is the evident cause of all the tides; as may be easily comprehended. The earth revolves on its axis, and the waters that environ it turn likewise together with the earth; the greatest circle of every spheroid which turns on its axis is that which has the most motion, and the centrifugal force increases as the circle is greater. The circle A, (fig. 45.) experiences a greater centrifugal force than the circle B; the waters of the sea will therefore rise at the equator by the centrifugal force alone, and not only the waters but the lands which are near the equator are likewise necessarily elevated.

This centrifugal force would throw off all the parts of the earth and sea, if the centripetal force, its antagonist, did not draw them towards the center of the earth; now all the sea which is without the tropics towards the poles having less centrifugal force because it moves in a much less circle, must obey the centripetal force so much the more; consequently it gravitates more towards the earth; it presses the ocean which extends towards the equator, and by that pressure contributes yet more in a small degree to the elevation of the sea under the line. This is the state of the ocean as far as it is affected by the sole combination of central forces. But what ought to happen from the attractions of the sun and moon? This constant elevation of the sea between the tropics ought to be increased, if the elevation be found opposed to any globe which attracts it. Now the tropical region of our earth is always beneath or opposed to the sun and moon: therefore the elevation
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of the sun and moon ought to produce some effect under these tropics.

1. If the sun and moon exert an action on the waters which are in those regions, this action ought to be greater at the time when the moon is opposite the sun, that is to say, at the opposition and conjunction, at full and new moon, than in the quarters; for in the quarters being more oblique in position with respect to the sun, the moon must act on one side while the sun acts on the other; their actions must be contrary in effect, and the one must diminish the other, so that the tides are higher in syzygas than in the quadratures.

2. The new moon being on the same side with the sun, ought to act so much the more on the earth by reason that her attraction is exerted nearly in the same direction as that of the sun. The tides ought therefore, *ceteris paribus*, to be rather stronger in the conjunction than the opposition; and this is what really happens.

3. The highest tides in the year ought to happen at the equinoxes, and to be higher at the new moon than at the full. Draw (fig. 46.) a line from the sun passing near the moon L, and falling on the equator of the earth. The equator AQ is attracted nearly in the same line by both these globes; the waters ought in this situation to be more attracted than in any other; and as they cannot be raised but by degrees, the greatest elevation is not precisely at the moment of the equinox, but a day or two after in DZ.

4. If by these laws the tides of the new moon at the equinox are the highest in the year, the tides in the quadratures after the equinox ought to be the lowest in the year, for the sun is still nearly at the equator, but the moon is then far from it as you see. For the moon L (fig. 47.) in eight days will be at R. Whence the same thing will happen to the ocean as to a weight drawn by two powers acting perpendicularly (to each other) on it at the same time, which act only in oblique directions; these two powers have no longer the same force, the sun no longer adds to the force of the moon that power which

it added when the moon, the earth, and the sun were nearly in the same perpendicular.

5. By the same laws we ought to have the tides stronger immediately before the vernal equinox than after; and, on the contrary, immediately after the autumnal equinox than before. For if the action of the sun at the equinoxes adds to the action of the moon, the sun ought to add so much the more as we are nearer to him; now we are nearer the sun before the equinox on the twenty-first of March than after; and, on the contrary, we are nearer the sun after the twenty-first of September than before that time; therefore the highest tides in the course of the year ought to happen before the vernal equinox, and after the autumnal equinox as experience confirms.

Having proved that the sun conspires with the moon in causing the elevations of the sea, it is necessary to find what quantity of force it adds. Newton and others have calculated that the mean elevation in the middle of the ocean is twelve feet, of which the sun raises two and a quarter, and the moon eight and three quarters.

To conclude, these tides of the ocean seem to be, as well as the precession of the equinoxes and the period of the earth in twenty five thousand nine hundred and twenty years, a necessary effect of the laws of gravitation, of which the final cause cannot be assigned; for to say with many authors, that God gives us the tides for the convenience of our commerce, is to forget that men did not trade to any distance by sea, till within the last two hundred and fifty years; it is still more hazardous to affirm that the ebb and flood renders the sea-ports more commodious; and even if it were true that the tides are useful to commerce, ought we to say that God has caused them with that view? How many ages have the land and sea subsisted before we made use of navigation to supply our new wants. "What," said an ingenious philosopher, "because at the end of a prodigious number of years spectacles have at length been invented, ought we to say that God has created the nose for the purpose of wearing them?" The same author affirms likewise, that the flux and reflux are ordained

dained by God that the sea might not stagnate and become corrupted : but they forget that the Mediterranean does not stagnate though it has no tides. When we presume thus to assign reasons for every thing that God has done we fall into strange errors. They who confine themselves to calculate, to weigh, and to measure, often deceive themselves ; what must then be the case with those who only guess ?

We shall carry our enquiries concerning gravitation no farther at present. This doctrine was quite new in France when the author explained it in 1736. It is now no longer so : and writers must conform to the times. The more mankind become enlightened, the less it is necessary to write.

C H A P. XII.

The C O N C L U S I O N.

LET us here conclude by taking the substance of all that we have said in the present work :

1. That there is an active power which impresses on all bodies a tendency one towards the other.
2. That with respect to the celestial bodies this power acts in the reciprocal proportion of the squares of the distances from the center of motion and in the direct ratio of the masses ; and this power is termed attraction, with respect to the center ; and gravitation, with respect to bodies which gravitate towards that center.
3. That this same power causes bodies to descend upon our earth, in tending towards the earth.
4. That the same power acts between light and bodies, as we have seen, but in an unknown ratio.

With regard to the cause of this power, so vainly searched after both by Newton, and those who have followed him, what better can we do than translate what Newton says at the end of his Principia ? Thus he expresses himself, as sublime in natural philosophy as he is profound in geometry. “ Hitherto I have explained

“ the phenomena of the heavens and of the sea by the
“ force of gravity, but the cause of gravity I have not
“ assigned. This force certainly arises from some cause
“ which penetrates to the centers of the sun and plan-
“ ets, without any diminution of its virtue ; and which
“ acts not according to the quantity of the superficies
“ of the particles on which it acts (as mechanical causes
“ use to do) but according to the quantity of solid mat-
“ ter ; and whose action is every way extended to im-
“ mense distances, decreasing always in the duplicate
“ ratio of the distances, &c.” This is to say directly
and positively that attraction is a principle which is not
mechanical. And a few lines after he says ; “ I make
“ no hypothesis, *hypotheses non fingo*. That which is not
“ deduced from phenomena is to be termed an hypo-
“ thesis ; and hypotheses whether metaphysical, phyfi-
“ cal, of occult qualities, or mechanical, have no place
“ in experimental philosophy.”

I do not say that this principle of gravitation is the
only agent in physics ; there are probably many other
secrets which we have not yet obtained from nature, and
which conspire with gravitation to preserve the order of
the universe. Gravitation, for example, neither accounts
for the rotation of the planets on their axes, nor their
determination in their orbits in one direction rather than
another, nor the surprising effects of elasticity, electricity
or magnetism. The time will perhaps arrive when we
shall have a collection of experiments sufficient to disco-
ver some other principles at present concealed. Every
thing informs us that matter has many more properties
than we are acquainted with. We are, as yet, on the
borders of an immense ocean. How many things re-
main to be discovered ! And, likewise how many things
are for ever out of the sphere of our knowledge.

End of the Elements.

M I S C E L L A N I E S.

The DREAM of PLATO.

PLATO was a great dreamer, and the custom has not fallen into disuse in succeeding times. He dreamed that human nature was once double, and that as a punishment for its faults it was divided into male and female.

He proved that there could be no more than five perfect worlds, because there are but five regular bodies in the mathematics. His republic was one of his principal dreams. He dreamed besides, that sleep is the production of waking, and waking of sleep, and that the sight would certainly be lost by looking at an eclipse otherwise than in a basin of water. In those days dreams produced great reputation.

Here follows one of his dreams, which is not the least interesting among them. It appeared to him that the great Demiurgos, the eternal geometrician, having peopled the infinite space with innumerable globes, was desirous of proving the wisdom of the genii who had been witnesses of his works. He gave to each a small quantity of matter to arrange, much in the same manner as Phidias and Zeuxis might have given statues and tablets to their scholars to make, if it be allowed to compare great things with small.

To Demogorgon was allotted the piece of dirt which is called the earth; who having arranged it in the manner in which we see it at present, supposed he had made a master-piece. He thought he had vanquished envy, and expected commendation even from his brethren. Great was his surprise when he was received by them with shouts of derision.

One of the most sarcastic among them, said to him;
“ Truly you have executed your work in the best man-
“ ner; you have divided your world into two, and you
“ have placed a great space of water between the two
“ hemispheres to prevent their having any communica-
“ tion with each other. The inhabitants of your world
“ will

“ will be frozen with cold under your poles, and will die
 “ with heat under your equinoctial line. You have
 “ prudently made large deserts of sand that travellers
 “ might die with hunger and thirst. I like your sheep,
 “ your cows and your poultry very well; but, frankly,
 “ I do not much admire your serpents and your spiders.
 “ Your onions and your artichokes are very good things,
 “ but I cannot imagine what was your idea in covering
 “ the earth with such a number of venomous plants;
 “ unless your intention was to poison the inhabitants.
 “ It appears besides, that you have formed thirty dif-
 “ ferent species of apes and monkeys, a greater number
 “ of species of dogs, and only four or five species of
 “ men: it is true you have given this last animal what
 “ you call reason, but, in conscience, this reason is too
 “ ridiculous and approaches too near to folly; it seems
 “ likewise that you have set no great value on this ani-
 “ mal with two legs, since you have given him so many
 “ enemies and so few means of defence; so many dis-
 “ eases and so few remedies; so many passions and so
 “ little wisdom. In all appearance you do not wish
 “ many of these animals should remain on the earth;
 “ for without reckoning the dangers to which you ex-
 “ pose them, you have settled affairs so well, that at a
 “ future period the small-pox will carry off regularly
 “ the tenth part of this species every year, and the sister
 “ of this small-pox will poison the source of life in the
 “ nine parts that shall remain; and as if this were not
 “ sufficient, you have so disposed things, that half the
 “ survivors shall be busied in quarrelling at law, and the
 “ other half in killing each other; they have, doubt-
 “ less, much reason to thank you, and you have formed
 “ a capital master-piece.”

Demogorgon blushed; he saw that there was
 both moral and physical evil in his affair, but he main-
 tained that there was more of good than evil. “ It is
 “ easy to criticise,” said he, “ but do you think it so
 “ easy to form an animal that shall be always reasonable,
 “ who shall be free and yet never abuse his liberty?
 “ Do you think that with nine or ten thousand plants

“ to propagate, it is easy to prevent some of these
 “ plants from having noxious qualities? Do you ima-
 “ gine that with a certain quantity of water, of sand,
 “ of mud, and of fire, it is possible to have neither sea
 “ nor desert? You, Mr. Sneerer, have arranged the
 “ planet Mars; let us enquire how you have performed
 “ your business, with your two great belts, and what a
 “ happy effect your nights will have without a moon.
 “ We shall see if there be neither folly nor disease among
 “ your people.”

In fact the genii examined Mars and the rallier was severely handled in his turn. The serious genius who had formed Saturn did not escape; and his brethren the constructors of Jupiter, Mercury and Venus had each reproaches to sustain in their turns.

Large volumes and pamphlets were written on the subject; bons mots were uttered; songs were made; the raillery became sharp, and the parties were exasperated: at length the eternal Demiurgos imposed silence on them; “ You have made,” said he to them, “ good
 “ and evil because you have much intelligence, and be-
 “ cause you are imperfect: your works shall endure
 “ only certain hundreds of millions of years, after which
 “ being better informed, you will do better; but it be-
 “ longs to me alone to make things perfect and im-
 “ mortal.”

This is what Plato taught his disciples. When he had done speaking, one of them said, And after that did you awake?

A Letter from the Author to Mr. de s'Gravesande, Professor of Mathematics.

I Thank you, Sir, for the figure you have been so obliging as to send me of the machine you make use of to fix the image of the sun. I shall have one made after your design, and shall be delivered from a great embarrassment; for I who am very unskilful have all the trouble in the world with my mirrors in my dark chamber.

ber. As the sun advances the colours pass away and resemble the affairs of the world which are scarce a moment in the same situation. I call your machine a *sta sol*. Since Joshua, no one before you has caused the sun to stand still.

In the same packet I received the work I begged you to procure, in which my adversary and the adversary of all philosophers employs three hundred pages on the subject of some thoughts of Pascal, which I had examined in less than a sheet. I am still for what I said. It is the fault of most books to be too long. He who has reason on his side will be short; but little reason and much scurrility have produced these three hundred pages.

I have always believed that Pascal committed his ideas to paper for the purpose of reviewing them and rejecting a part. The critic will not believe this. He maintains that Pascal approved of all his thoughts and would not have struck out any; but if he knew that the editors themselves have suppressed half of them he would be much surprised. He need only to look at those which the father des Mollets has recovered some years since, written in the hand of Pascal himself, and he will be yet more surprised. They are printed in the *Recueil de Littérature*.

Men of a strong imagination like Pascal, speak with a despotic authority; the ignorant and the weak hear them with a servile admiration; but men of sense examine them.

Pascal, during the last year of his life, believed that he saw an abyss at the side of his chair. Must we therefore imagine the same? For my part, I likewise see an abyss, but it is in the things he has been supposed to have explained. You will find, in the miscellanies of Leibnitz, that melancholy unsettled the reason of Pascal towards the end of his life; he even says it rather harshly. It is not surprising after all that a man of a delicate temperament and melancholic imagination, like Pascal, should by means of a bad regimen, have deranged the organs of his brain. This disorder is neither more surprising nor more humiliating than the fever or the head ach. If
the

the great Pascal has been attacked by it, it is Sampson who is deprived of his strength. I cannot determine what malady it is that afflicts the doctor who argues so bitterly against me; he is every where in the wrong, but chiefly respecting the present question:

The foundation of my Cursory Remarks on the Thoughts of Pascal is, that we ought without doubt to believe in original sin, because the faith commands it, and that we ought to believe it so much the more on account that reason is absolutely incapable of shewing us that human nature is fallen. Revelation alone can teach us this. Plato formerly embarrassed himself with this subject. How could he know that men had once been more beautiful, more large, more strong, or more happy? that they had had beautiful wings and produced infants without women.

All those who have made use of physics to prove the depravation of the little globe of our earth have had no better fortune than Plato. Behold, say they, these deformed mountains, these seas which overflow the earth, these lakes without communication? They are the ruins of a cursed world. But when they have taken a nearer and more intimate view, it has appeared that these mountains were necessary to produce rivers and mines, and that they are the productions of a blessed world. In like manner, my censor assures me, that the life of man is very short in comparison to those of crows and stags; he has heard his nurse say, that stags live three hundred and crows nine hundred years. The nurse of Hesiod in all appearance told him the same story. But my doctor need only consult some huntsman to be assured that stags never reach to twenty years of age. Let him say what he will, man is of all animals that to which God has granted the longest life; and when my critic shall shew me a stag of the age of two hundred years, like Mr. de St. Aulaire and Madame de Chanclos, he will do me a singular favour.

It is a strange passion that some gentlemen have, who absolutely will have us to be miserable. I do not admire the quack doctor who attempts to persuade me I am ill that
he

he may sell his medicines. Keep your pills, my friend, and let me keep my health. But why do you treat me with ill language because I am in good health and chuse to have nothing out of your package? This man treats me in the grossest manner according to the laudable custom of those who have not the laughs on their side. He has taken the pains to expose a certain journal, certain letters *on the nature of the soul*, which I never wrote, and which a bookseller has always published to his own advantage under my name, as well as many other things which I do not even read. But since this man reads them he ought to see that it is evident that these letters *on the nature of the soul* are not mine, and that they contain entire pages copied word for word from what I formerly wrote concerning Locke. It is clear that they are the production of some one who has stolen from me; but I never steal in that manner, how poor soever I may be.

My doctor torments himself to prove that the soul is spiritual*, *spirituelle*. I wish to believe that his is so, but in truth the reasons to think so are but few. He attempts to attack Locke in my writings, because Locke said that God was sufficiently powerful to cause an element of matter to think. The oftener I read Locke the oftener I wish all these gentlemen would study him. It appears that he has acted like Augustus, who made an edict, *De coercendo intra finas imperio*. Locke has contracted the bounds of science in order to render it more sure. What is the soul? I know not. What is matter? I know not. But here is Joseph Godfrey Leibnitz, who has discovered that matter is an assemblage of monades. Be it so: but I understand him no more than the other. Well; my soul shall be a monade; am I not thus well instructed and informed? I am going to prove, says my doctor, that you are immortal. Truly you will do me a pleasure. I have quite as great a desire to be immortal as you yourself. I wrote the

* The author puns on the word which is used to signify *witty* or *ingenious* as well as *spiritual*. N.

Henriade for that and no other purpose. But my gentleman thinks himself much surer of immortality by his arguments than I by my Henriade.

Vanitas vanitatum, & metaphysica vanitas.

We are formed to calculate, to measure, to weigh; behold what Newton has done; this is what you and Mr. Muschenbrook are doing. But as to the first principles of things we know no more of them than Epistemon or master Editicus.

The philosophers, who make systems of the secret construction of the universe, are like our travellers who go to Constantinople and talk of the Seraglio; they have seen only the outside and pretend to know what the sultan does with his favorites. Adieu, Sir, if any one sees a little it is you; but I esteem my censor as blind. I have the honour to be so likewise; but I am one of the *quinze vingt* of Paris, and he is a blind man of a province. Yet I am not so blind as not to see all your merit and you know how much my heart is sensible of your friendship. I am, &c.

Cirey, June 1, 1741.

Answer to Mr. Martin Kahle, Professor and Dean of the Philosophers of Goettingen. Concerning the foregoing Metaphysical Questions.

MR. DEAN,

I AM very happy to learn from the public prints that you have written a little book against me. You have done me much honour. In page 17, you reject the proof of the existence of God which is drawn from final causes. If you had reasoned thus at Rome, the reverend father Jacobin, master of the holy palace, would have thrown you into the inquisition. If you had written against a theologian of Paris he would have had your proposition censured by the sacred faculty.

culty. If against an enthusiast, he would have restored by scurrility and rudeness, &c. &c. but as I have not the honor to be either a Jacobin, a theologian, or an enthusiast, I am content to leave you in possession of your opinion while I retain my own. I shall always be of opinion that a clock proves a clock-maker, and a universe a God. I hope you understand yourself in what you say concerning space, duration, the necessity of matter, monades, and the pre-established harmony; and refer you to what I have said in this new edition, in which I wish to make myself understood, which is no small matter in metaphysics.

Concerning space and infinitude you quote the *Medea* of Seneca, the *Phillippics* of Cicero, the *Metamorphoses* of Ovid, the verses of the Duke of Buckingham, of Gombaud, Reignier, Rapin, &c. I must inform you, Sir, that I know as much of verses as yourself, that I love them as well, and that if our present business was about verses we should have fine sport; but I do not think them very proper to clear up a metaphysical question, even tho' they were the verses of Lucretius, or Cardinal Polignac. To conclude, if ever you should comprehend any thing relative to the monades, or the pre-established harmony; and to make use of verse,

If Mr. Dean should ever prove,
How bodies in a plenum move;

if you should likewise discover how every thing being necessary, man is free, you will do me a pleasure by letting me know. When you shall have likewise demonstrated, in verse or otherwise, why so many men cut each others throats in the best possible of worlds, I shall be much obliged to you.

I attend your reasoning, your verse or your invectives, and protest to you with all my heart that neither you nor I know any thing of the matter. In other respects, I have the honor to be, &c.

A short

A short Answer to the long Discourses of a
German Doctor.

I Had given myself up to philosophy in hopes of finding repose, which Newton calls *rem-proisus substantialem*; but I find that the square root of the cube of the revolutions of the planets and the squares of their distances have produced new enemies. I perceive that I have incurred the indignation of certain German doctors. I have dared to measure the force of bodies in motion by $m+v$ (or rather $m \times v$). I have had the insolence to doubt of the monades, the pre-established harmony, and even the grand principle of indiscernables. Notwithstanding the sincere respect I have for the great genius of Leibnitz, can I ever hope for repose after endeavouring to shake these foundations of nature? Long sophisms and harsh reproaches have been used to convince me, according to respectable custom long since introduced into the science which is called philosophy, that is to say, the love of wisdom.

It is true that a person infinitely respectable on every account and who possesses a genius in many different branches of science has condescended to explain and adorn the system of Leibnitz. I have been astonished that I could not believe as well as admire it; but I have at length discovered the reason; it is that she herself scarcely believed it; and this is what often happens between those who imagine they wish to persuade, and those who use an effort to suffer themselves to be persuaded.

The more I proceed, the more I am convinced that systems of metaphysics are for philosophers, what romances are for women. They are all in vogue one after the other, and they all expire by being forgot. A mathematical truth endures for ever, and the fancies of metaphysics pass away like the dreams of the sick.

When

When I was in England, I could not have the satisfaction of seeing the great Newton who verged towards the conclusion of life. The famous curate of St. James's, Samuel Clarke, the friend, the disciple, and the commentator of Newton, condescended to give me some instructions concerning this part of philosophy which is raised on the basis of sense and calculation. I did not, in truth, find him possessed of that circumspect anatomy of the human mind, that staff of the blind, with which the modest Locke walked, seeking his way and finding it; in short that wise timidity, which stopped Locke on the borders of the abysses. Clarke leaped into the abyss, and I was daring enough to think of following him. One day, full of these grand researches which charm the mind by their immensity, I said to a very enlightened member of the (Royal) Society: Mr. Clarke is a much greater metaphysician than Mr. Newton. That may be, replied he coldly; it is as much as to say that the one plays better at ball than the other. This answer made me return into myself. I have since ventured to pierce some of these metaphysical balls, and found that they contained nothing but wind. So likewise when I said to Mr. s'Gravesande, *vanitas vanitatum, & metaphysica vanitas*, he answered me, *I am very sorry that you are right.*

The father Mallebranche, in his *Recherche de la verité*, conceiving nothing to be either beautiful or useful but his system, expresses himself thus; "Men are not
 " made to consider flies; and the trouble is not to be
 " commended which some persons give themselves to
 " acquaint us how certain insects are formed, the trans-
 " formation of worms, &c. It is allowable to amuse
 " one's self with these things for the sake of diversion,
 " when one has nothing to do." Nevertheless, this
amusement, for the sake of diversion, has brought us acquainted with the inexhaustible researches of nature, which restore to animals the members they have lost, which reproduce their heads after they are cut off, which give to this insect the power of performing the act of generation the instant after its head is separated from
 its

its body and which permit others to multiply their species without the aid of the sexes. This *mere amusement* has discovered a new universe in parvo, and an infinite variety of the exertions of wisdom and power; while Mallebranche after forty years study has discovered, *that light is a vibration of pressure on little vortices in motion, and that we see every thing in God.*

I have observed that Newton knew how to doubt; and thereupon they exclaim—"Oh, as for us, we have
 " no doubts; we know by infallible science that the
 " soul is, I know not what thing, destined necessarily
 " to receive I know not what ideas, at the time the
 " body necessarily makes certain motions, without the
 " one having the least influence on the other; as if one
 " man were to preach, and another make the gestures.
 " And this is called the pre-established harmony. We
 " know that matter is composed of beings, which are
 " not matter, and that in the paw of a maggot there
 " is an infinity of substances without extension, each of
 " which has confused ideas which compose a concentrated mirror of all the universe, and this doctrine is
 " called the system of the monades. We also conceive
 " perfectly the agreement between liberty and necessity,
 " and understand very well *how bodies in a plenum move.*"
 Happy must they be who are able to comprehend things so little comprehensible, and who see another universe besides this we live in.

I admire a Doctor who informs you in an ironical and magisterial tone, "You err, and are ignorant that it
 " has lately been discovered, *that that which is, is possible, and that every thing that is possible is not actual; and
 " that every thing that is actual is possible, and that the
 " essences of things do not change.*" Ah, would to God that the essence of Doctors would change! Well then, you have informed us that there are essences, and I, in return, inform you, that neither you nor I have the honor to be acquainted with them; I acquaint you that no man on earth ever knew or will know what is matter, what is the principle of life and thought, what is the human soul, whether there be souls whose nature it is

to think only without reasoning, or to reason without thinking, or to do neither the one nor the other; whether that which we call matter has sensations, in like manner as it possesses gravitation; whether, &c.

As to the dispute concerning the measure of the force of bodies in motion, it appears to me to be no more than a dispute of words; and I am sorry that there are any such in the mathematics. Whether we compute by $m+v$ (or rather $m \times v$) or by $m+v^2$ (or rather $m \times v^2$) mechanics will not be at all changed; the same number of horses will be required to draw burthens, and the same charge of powder for cannon. This quarrel is the scandal of geometry.

Yet would to heaven that this were the only quarrel among men! we should be angels upon earth. But do not we rather resemble at times, the devils which Milton represents, as devoured with rage, inquietude, disgust and pain, and yet reasoning on metaphysics in the midst of their torments.

Thus we behold, in Milton's brilliant dreams,
The wretches doom'd to hell's infernal streams,
Immers'd in torrents of sulphureous fire,
To sound the arduous depths of fate aspire:
Being, foreknowledge, liberty and thought.
Torture their minds in endless mazes caught;
In vain they search and toil an end to find,
The vast abyss is scan'd by no created mind.

———“ And reason'd high

“ Of Providence, foreknowledge, will and fate:

“ Fixt fate, freewill, foreknowledge absolute,

“ And found no end, &c.”

Letter concerning Roger Bacon.

YOU think, Sir, that Roger Bacon, the famous monk of the thirteenth century was a very great man, and that he was possessed of true knowledge, because
I he

he was persecuted and thrown into prison at Rome by ignorant people. I confess that this is a great prejudice in his favour. But does not it happen every day that quacks gravely condemn each other, and that fools are compelled to pay fines to others equally ignorant? This world has long resembled the madhouse, in which he who believed himself to be the eternal father anathematized him who believed himself to be the Holy Ghost; and these adventurers are not extremely rare at this day.

Among the things for which he is respectable, we must first place his imprisonment, and next the noble boldness with which he declared that all the books of Aristotle were only fit to be burned; and that in an age when scholastic men respected Aristotle much more than the Jansenists did St. Augustin. But has Roger Bacon produced any thing better than the poetics, the rhetoric and the logic of Aristotle? These three immortal works prove incontrovertibly, that Aristotle was a great and respectable genius, penetrating, profound and methodical, and that he was a bad natural philosopher, on no other account than because it was impossible to penetrate into physical knowledge without instruments.

Has Roger Bacon in his best work in which he treats of light and vision, has he expressed himself clearer than Aristotle, when he says, light causes by means of multiplication its luminous species, and this action is termed univocal and conform to the agent; that there is another multiplication which is equivocal, by which light engenders heat, and heat putrefaction?

The same Roger Bacon in another place tells you, that life may be prolonged by spermaceti, aloes and dragons flesh, but that immortality may be procured by means of the philosophers stone. You are to observe, that together with these valuable secrets, he possessed all those of judicial astrology without exception; so likewise he assures us in his *Opus Majus*, that the head of man is submitted to the influences of the Ram, his neck to those of the Bull, his arms to the power of the Twins, &c. He even proves these fine things by experience, and praises

much a great astrologer of Paris, who prevented, says he, a physician from putting a plaister on the leg of a diseased person, because the sun was then in the sign of the Waterer, and because the Waterer is mortal for legs to which plaisters were applied.

It is an opinion generally enough received, that our Roger was the inventor of gunpowder. It is certain that his time was on the eve of this horrible discovery, for I observe the spirit of invention is of all times, and that Doctors and men who govern men and bodies, may be as profoundly ignorant as they please, they may cause the most senseless prejudices to prevail, they may be without common sense, there will always be found certain obscure artists, animated with a superior instinct, who invent admirable things, upon which the learned afterwards reason.

Here follows word for word, the famous passage of Roger Bacon concerning gunpowder. It is found in the London edition of his *Opus Majus*, page 474. "The
" Greek fire is with difficulty extinguished, for it is not
" extinguished by water. And there are certain fires,
" whose explosion makes so much noise, that if they
" should be set on fire suddenly, and by night, a town and
" an army would not be able to sustain it; the claps of
" thunder are not to be compared with them. There
" are fires that astonish the sight so much, that the
" lightning from the clouds is more tolerable; it is
" thought that it was by artifices of this nature, that
" Gideon threw terror into the army of the Midianites.
" And we have a proof of this in the play of infants,
" that is practised over all the world. Saltpetre is
" rammed hard into a ball of the size of an inch. This
" is made to break with a noise which exceeds that of
" thunder, and a firey exhalation is emitted, which is
" greater than that of lightning." It appears evidently, that Roger Bacon knew no more than the common experienced, of a little ball filled with saltpetre and placed on the fire. This is yet far from gunpowder of which he does not speak in any place, but which was soon after invented.

One thing surprises me more, which is, that he was ignorant of the direction of the magnetic needle, which in his time began to be known in Italy; but as a compensation for this, he knew very well the secret of the hazle twig (of divination) and many other things of that nature, concerning which he treats in his *Dignity of the experimental Art*.

Yet notwithstanding this shocking number of absurdities and chimeras, it must be confessed that this Bacon was a great man considering the age he lived in. What age? You ask me; the age of the feudal government, and scholastic learning. Imagine to yourself, the Samoyeds and Ostiaks to have read Aristotle and Avicen, and you will have an idea of what we were.

Bacon knew a little of geometry and optics, which occasioned him to be taken for a forcerer at Rome and at Paris. Yet his knowledge extended no farther than the works of Alhazen; for at that time nothing was known but by the Arabians. They were the philosophers to all the Christian kings. The king's fool was always a native; but the doctor was either an Arabian or a Jew.

Transport this Bacon to the time in which we live, he would without doubt be a very great man. He resembled gold debased by the filth of the age he lived in; had he lived in latter times, the gold would have been purified and refined.

Unhappy mortals that we are! How many ages have been required to obtain the small share of reason we possess!

On the Anti-Lucretius of Cardinal de Polignac.

THE perusal of the whole poem of the late Cardinal Polignac, has confirmed me in the idea which I conceived when he read the first part to me. I am more astonished that in the midst of the dissipations of the world, and the thorns of business, he could write so long a work in verse in a strange language, he who could

scarce have composed four verses in his own language; It appears to me that he often unites the force of Lucretius with the elegance of Virgil. Above all, I admire him for that facility with which he constantly expresses himself on subjects of so much difficulty.

It is true that his *Anti-Lucretius* is perhaps too diffuse, and not sufficiently varied; but I do not here inquire into his merit as poet, but as a philosopher. It appears to me that an enlarged mind like his ought to do more justice to the manners of Epicurus, who, though a very indifferent philosopher, was not the less a good man, and who always taught mildness, temperance, moderation and justice, virtues which his example taught still more than his words.

This great man is thus apostrophized in the *Anti-Lucretius*.

*Si virtutis eras avidus, rectique, bonique,
Tam sitiens, quid religio tibi sancta nocebat,
Aspera quippe nimis visa est. Asperrima certe,
Gaudenti vitiis, sed non virtutis amanti.
Ergo perfugium culpæ, solisque benignus
Perjuris ac foedifragis, Epicure, parabas.
Solam hominum foecem poteras devotaque furcis
Corpora, &c.*

Which may be thus rendered, lending it, if I may presume to say so, a little more force :

*If thou hadst ever dared to combat vice,
If thy pure heart had cherished virtue's flame !
Why shouldst thou rob the breast of innocence,
Of that great power who gives it its reward?
'Twas thy impiety that fear'd control,
That trembled at his government severe.
Teacher of ill, thy execrable hand
Hath strew'd the paths of perjury with flowers,
Opened the dire abysses of injustice,
And plunged the earth———*

But

But Epicurus might answer the Cardinal: if, like you, I had had the happiness to know the true God, to be born like you among people professing a pure and holy religion, I certainly should not have rejected this revealed God, whose laws were necessarily unknown to my mind, but whose morals existed in my heart. I could not admit of gods such as were announced to me by the Pagan system. I had more reason than to adore divinities which they affirmed were born of a father and mother like mortals, and who made war like them. I was too much the friend of virtue, not to hate a religion which sometimes invited to crimes by the examples of the gods themselves; and sometimes remitted for money the most horrible delinquencies. On the one hand, I every where saw men void of sense and sullied with vice, who sought to render themselves pure in the sight of impure gods; and on the other hypocrites, who boasted their power to justify the most perverted, either by initiating them into certain mysteries, or by causing the blood of bulls to fall on them drop by drop, or by plunging themselves in the waters of the Ganges. I observed the most unjust wars undertaken as soon as the liver of a ram was found without a spot, or when a woman with disheveled hair and troubled visage had pronounced certain words, whose meaning was known neither to herself nor any one else. In short, every land being stained with the blood of human victims, which barbarous pontiffs sacrificed to barbarous gods: I thought myself right in detesting such religions. My religion was virtue. I invited my disciples not to meddle with the affairs of the world, because they are horribly governed. A true Epicurean was a mild, moderate, just and amiable man, of whom no society had reason to complain, and who paid no butchers to assassinate in public those whose opinions differed from his own. From this state to that of the holy religion in which you were bred, there is but one step to make. I have destroyed the false gods, and if I had lived in your time I should have acknowledged the true,

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In this manner might Epicurus vindicate himself; he might even deserve his pardon with regard to the immortality of the soul, by saying, you ought to sympathize with me for having opposed a truth which God has revealed five hundred years after my birth. I thought like all the first Pagan legislators of the world who were all ignorant of this truth.

I should therefore have wished that the Cardinal Polignac had pitied Epicurus at the same time that he condemned him; a conduct that would not have been less favourable to good poetry. As to the natural philosophy, it seems to me that the author has thrown away much time and many verses in refuting the declination of atoms, and the other absurdities with which the poem of Lucretius abounds. This is to employ artillery to demolish a cottage. Besides, why should he wish to substitute the dreams of Descartes in the place of those of Lucretius?

Cardinal Polignac has inserted very good verses in his poem, respecting the discoveries of Newton: but unfortunately for himself, he combats demonstrated truths. The philosophy of Newton does not admit of being discussed in verse; with difficulty it is treated of in prose; for it is all founded in geometry. The genius of poetry will reap no laurels here. The external part of these truths may be adorned by verse; but to go deep into things, calculation and not verse is necessary.

D I S S E R T A T I O N,

Sent by the Author, in Italian, to the Academy at Bologna, and translated into French by himself; on the Changes which have happened on our Globe, and on the Petrefactions which are pretended to be the remaining Proofs of such Changes.

THERE are errors which are not for the people; some are peculiar to philosophers. Perhaps the idea which so many philosophers entertain that we see
over

over all the earth proofs of a general destruction, is an error of this kind. They have found on the mountains of Hesse a stone that appeared to bear the impression of a turbot, and on the Alps a petrified pike; and have concluded from thence, that the sea and rivers have once flowed on those mountains. It were more natural to conclude, that these fishes being carried thither by some traveller were spoiled and thrown away, and that in process of time they became petrified; but this idea was not systematic enough. It is said that a ship's anchor was found on a mountain in Switzerland: but it is not remembered that very great burthens have been carried by men, especially cannon; that this anchor might serve for the purpose of resting or fixing the burthen to some cleft in the rock; that it is very likely that this anchor was found in one of the little ports of the lake of Geneva; that in short, the history of the anchor is, perhaps, fabulous; and it is thought more pleasing to affirm, that it is the anchor of a vessel that was wrecked in Switzerland before the deluge.

The tongue of a sea-dog has some resemblance with a stone which is termed *glossopetra*. This has been sufficient to assure philosophers, that these are tongues which the sea-dogs left on the Appenines in the time of Noah; why have they not likewise affirmed that the shells, which are termed *conchæ veneris*, are, in fact, the real thing whose name they bear.

Reptiles almost always take the form of a spiral when they are not in motion; and it is not surprising, that when petrified, the stone should have the same form. It is yet more probable, that there are stones which were generated in the form of a volute, the Alps and the Vafges are every where full of them. It has pleased naturalists to term them *cornua ammonis*. Here they chuse to discover the nautilus, a fish that has never been seen, and which is produced, they say, in the Indian seas. Without examining much whether this petrified fish was the nautilus or an eel, they have concluded the Indian ocean has long overflowed the mountains of Europe,

In

In the provinces of Italy, France, &c. shells have been found which are affirmed to be originals of the Syrian sea. My present intention is not to dispute their origin; but might we not here recollect the numberless herd of pilgrims who carried their money to the Holy Land, and brought back shells; or is it preferable to think that the sea of Joppa and Sidon has covered Burgundy and Milanais?

We might here dispense with believing either the one or the other of these hypotheses, and think, with many philosophers, that these shells, which are thought to have been conveyed from so great a distance, are fossils which the earth produces. We might moreover with much more probability conjecture, that there has once been lakes in the places where shells are now found. But whatever opinion or whatever error is accepted can these shells prove, that the whole universe has been totally overthrown and disarranged?

The cliffs of Calais and Dover are chalk; these mountains then were once united, no sea intervening. The land about Gibraltar and Tangiers are nearly of the same nature; therefore Africa and Europe were once joined, and the Mediterranean did not exist. The Pyreneans, the Alps, the Appenines, have appeared to many philosophers to be the wrecks of a world that has often changed its form. This opinion has been long maintained by the whole school of Pythagoras, and by many others. They affirmed, that all the habitable earth had once been sea, and that the sea had for a long time been land.

We know that Ovid only reports the opinion of the oriental philosophers, when he puts the Latin verses into the mouth of Pythagoras, whose sense is this:

Time that has given to nature life and force,
Forms and destroys all beings in its course;
For all things change in heav'n, in earth, in air;
The golden age shall in its turn appear;
The gifts of spring shall o'er the desert spread,
And hoary ocean change his oozy bed,

Forests

Forests now grow where roll'd the briny tide,
And rocky Caucasus has bilg'd the vessel's side.
Time's ceaseless pow'r the humble vale shall raise,
And crush the lofty mountain to its base;
While the eternal Power unshaken reigns,
And tho' all nature change, himself unchang'd remains.

Such were the opinions of the Indians and of Pythagoras, and they do not appear to a disadvantage by being put into verse. These opinions have been more than ever believed by the observation of those beds of shells which are found in heaps in Calabria, Tourain and other places, in lands situate at considerable distances from the sea. In fact, it is probable that they have been deposited during a long course of years.

The sea, which has retired some leagues from its ancient boundary, has gained by degrees on other shores. From this almost insensible variation it has been thought proper to conclude, that it has long covered the rest of the globe. Frejus, Narbonne, Ferrara, &c. are no longer sea-ports; half the little country of East Friesland has been submerged by the ocean; whence it is inferred, that whales have swam for ages on mount Taurus and the Alps, and that the bottom of the sea has been peopled with men.

This system of the physical revolutions of this world has been fortified in the minds of some philosophers, by the discovery of the Chevalier de Louville. This astronomer went to Marseilles to observe whether the obliquity of the ecliptic remained the same, as it had been determined by Pytheas two thousand years before. He found it less by twenty minutes; that is to say, according to him, the ecliptic had approached one-third of a degree nearer the equator in two thousand years, whence it follows, that in six thousand years it will have approached it a whole degree.

This being supposed, it is evident, that the earth, besides the motions it is known to have, must have yet another which will make it turn on itself from one pole to the other.

other. It must follow, that in twenty three thousand years the sun will be in the equator for a long time : and that in a period of about two millions of years all the climates of the world must have been, in turn, in the torrid and in the frigid zone. And why, say the supporters of this opinion, should we hesitate to admit a period of two millions of years ? There are probably longer intervals between the reciprocal positions of the stars. We are already acquainted with a motion of the earth, which is accomplished in twenty-five thousand years ; namely, the precession of the equinoxes. Revolutions of thousands of millions of years are infinitely less in the eye of the eternal Architect of the universe, than the motion of a wheel, whose rotation is performed in the twinkling of an eye, appears to us. This new period imagined by the Chevalier de Louville, maintained and corrected by many astronomers, occasioned an examination of the ancient observations of Babylon transmitted to the Greeks by Alexander, and handed to posterity by Ptolemy in his *Almagest*.

The Babylonians, at the time of Alexander, pretended to be in possession of astronomical observations for the space of four hundred thousand three hundred years. It has been attempted to reconcile the calculations of the Babylonians with the hypothesis of the revolution of two millions of years. In short, some philosophers concluded, that every climate, having been in its turn one time at the pole and another time at the equinoxial, all the seas have changed their situation.

Extraordinary, vast, and great mutations are objects that sometimes please the most correct imaginations. Philosophers wish for great changes in the scene of the world, upon motives similar to those which induce the people to wish the same thing at the theatre. From the point of duration in which we exist, our imagination launches into millions of ages to behold with pleasure Canada beneath the equator, and the sea of Nova Zembla on the mountains of Atlas.

An

An author, who has rendered himself more famous than useful by his Theory of the Earth, has pretended that the deluge overturned the whole of our globe, formed the wrecks of a world, the rocks and mountains, and put every thing into irreparable confusion; he beholds nothing in the universe but ruins. The author of another theory, not less celebrated, sees nothing but regularity, and affirms, that without the deluge this regularity could not have subsisted; each of them admit the mountains to be the consequence of an universal deluge.

Burnet, in his fifth chapter affirms, that the earth before the deluge was plain, regular, and uniform, without mountains and without a sea; the deluge, according to him, was the occasion of the difference between this state and that we see; whence is deduced the reason why we find the *cornua ammonis* on the Appenines.

Woodward is willing to acknowledge that the antediluvian earth had mountains, but he is persuaded that they, with their metallic contents, were dissolved by the deluge, that others were formed; and that it is in this new earth that we find flints, formerly softened by the waters, which now contain petrified animals. Woodward, in fact, might have perceived that marble, flint, &c. were not to be dissolved in water, and that sea shells are very hard. Yet no matter; it was necessary to his system that the water should have dissolved in one hundred and fifty days all the stones and minerals in the universe, in order to lodge oysters and cockles in their bowels.

The time the deluge lasted would be insufficient to read all the authors who have formed systems on this subject. Every one destroys and renews the world with the same ease as Descartes formed it; for the greater part of philosophers have, without ceremony, put themselves in the place of God; they think to create the universe by a word.

My present design is not to imitate them, and I have no hope of discovering the means which God has made use of to create, to drown, or to preserve the world. I
hold

hold to the words of the scripture without pretending to explain it, and without daring to admit any thing that is not to be found in it. Let it be granted me to examine only whether this globe has been and ought to be one day so absolutely different from the state in which it now is. For this enquiry it is only necessary to use one's eyes.

In the first place I examine those mountains which Doctor Burnet and so many others look upon as the ruins of an old world dispersed without order, like the remains of a town which has been destroyed by artillery. I observe them, on the contrary, arranged with the greatest order from one end of the universe to the other. They in reality form a continued chain of lofty aquaducts, which, being divided and separated in many places, leaves the spaces which are necessary for rivers and branches of the sea, to afford the requisite moisture to the earth.

From the Cape of Good Hope extends a range of mountains, which are depressed to let pass the Niger and the Zair, and which rise again under the name of Atlas, while the Nile originates from another branch of these mountains. A narrow arm of the sea separates Atlas from the promontory of Gibraltar, which is joined to Sierra Morena; this touches the Pyreneans, the Pyreneans the Cevennes, the Cevennes the Alps, and the Alps the Appenines, which terminate at the extremity of the kingdom of Naples; opposite to which are the mountains of Epirus and Theffaly. You have scarce passed the straits of Gallipoli when you find mount Taurus, whose branches, under the name of Imäus, Caucasus, &c. extend to the extremities of the globe; thus it is that the earth is every where adorned with these reservoirs of water, from which all the rivers originate without exception, by which it is watered and rendered fruitful. And there is no river to which the sea furnishes the least rill of its salt waters.

Burnet had a chart of the earth divided into mountains instead of provinces: he labours by this representation and his arguments to place an image of the most
horrible

horrible disorder ; but from his own words as well as from his chart, we can discover nothing but harmony and utility. " The Andes in America," says he, " are " a thousand leagues long ; Taurus divides Asia into " two parts, &c. a man who could take in the whole " with one cast of the eye, would see that the earth is still " more deformed than is imagined." It appears quite the contrary, that a reasonable man who could see with a cast of the eye both the one and the other hemisphere crossed by a range of mountains, which serve as reservoirs for rain, and sources of rivers, could not but acknowledge, in this pretended confusion, all the wisdom and goodness of God himself.

There is not a single climate on the earth without mountains and rivers which issue from thence. This chain of rocks is an essential part of the mechanism of the world. Without it the animals on the earth could not live ; for life is not supportable without water. The water is elevated from the seas and purified by the continual evaporation : the winds carry it to the summits of the rocks, whence it precipitates in rivers : and it is proved that this evaporation is sufficient to supply both the rivers and the rain.

The other opinion which pretends, that in the period of two millions of years, the axis of the earth moving itself continually or turning on itself, has forced the ocean to change, its bed ; this opinion I say, is not less contrary to physics. A motion which removes the axis of the earth ten minutes in a thousand years, does not appear sufficiently violent to disturb the globe, or derange its surface ; this motion, supposing it to exist, would certainly leave the mountains in their places ; and to speak freely, it is not probable that the Alps have been removed from Caffraria to their present situation, neither by slow degrees nor all at once.

The view of the ocean serves as much as the mountains to overthrow this system. The bed of the ocean is hollowed out ; and the more distant any part of this vast basin is from the shore, the deeper it is found to be. There is no rock in the open sea if you except an island

or

or two. Now, if there had been a time in which the sea was upon our mountains, if men and animals had then lived in this cavity in which the sea now is, could they have subsisted? From what mountains could they then have received their rivers? It must have required a globe of an intirely different nature. And how could this globe have then revolved on its axis, being half hollowed, and the other half elevated and charged besides with the whole mass of the ocean? The laws of gravity and the laws of fluids must have then been entirely quashed and could not have taken place; how could this ocean have remained on the tops of mountains, without flowing down into the vast bed which nature has hollowed out for it? When philosophers are rash enough to attempt the creation of a world, ridicule must follow the vain exertion.

There is therefore no system that can give the least probability to the notion so generally received, that the face of our globe is changed, that the ocean has long been upon the habitable earth, and that men have formerly lived where porpoises and whales now inhabit. Vegetable and animal beings are not changed; all the various species have remained the same: it would be very strange that a grain of millet should eternally preserve its nature, and that the whole globe should be subject to such great variations.

What is here said of the ocean, may be applied to the Mediterranean, and that great lake which is termed the Caspian sea. If these lakes have not always been where they are, it is absolutely necessary that the former earth must have been of a nature entirely different from the present.

A great number of authors have written that an earthquake having once swallowed up the mountains which joined Europe and Africa, the ocean made a passage between Calpé and Abila, and formed the Mediterranean sea, which ends five hundred leagues from thence, at the Palus Meotides; that is to say, five hundred leagues of country fall in at once to receive the ocean. It is farther remarkable, that the sea is unfathomable off Gibraltar,

braltar, and that therefore the adventure of the mountain is the more wonderful.

If attention be only paid to all the rivers of Europe and Africa, which fall into the Mediterranean, it will be seen that they ought necessarily to form a great lake. The Tanais, the Boristhenes, the Danube, the Pö, the Rhine, &c. could not fall into the ocean, unless we indulge ourselves in the pleasure of supposing a time when the Tanais and the Boristhenes came thro' the Pyrenean mountains to fall into the bay of Biscay.

Philosophers say, that it is nevertheless necessary that the Mediterranean should have been produced by some accident. It is demanded moreover, what became of so many rivers as are now received into its bosom? And what is to make the Caspian sea? They imagined a vast subterraneous cavity formed in the subversion of things, which gave rise to these seas; they affirmed that these seas communicated with each other, and with the ocean by this supposed passage; they even reported that fishes which had been cast into the Caspian sea with a ring in their nose, had been caught again in the Mediterranean. Thus it is that history and philosophy have long been treated; but since true history has been substituted in the place of fables, and systems have given place to true philosophy, we ought no longer to give credit to fables of this nature. It is sufficiently proved that evaporation alone is sufficient to explain how these seas do not overflow, and that it is not necessary they should evacuate into the ocean. And it is very probable that the Mediterranean has always possessed its present place, and that the fundamental constitution of the universe has not been changed.

I know very well, that there will always be people upon whose minds a petrified pike found on Mount Cenis, and a turbot found in the country of Hesse, will have more influence than all the reasoning of sound philosophy: they will please themselves in imagining that the ridge of a mountain has been the bed of a river or of the ocean, however improbable the thing may appear: and others will think when they see certain pre-

tended shells of Syria, in Germany, that the sea of Syria has been at Franckfort. The passion for the marvellous produces systems; but nature seems to delight in uniformity and constancy, as much as our imaginations are pleased with grand mutations; and as the great Newton says, *natura est sibi consona*. The scripture tells us that there has been a deluge; but it seems no other monument remains of it upon earth, than the remembrance of a dreadful prodigy that in vain exhorts us to reform and be just.

A Digression concerning the Manner in which it is possible our Globe might be inundated.

WHEN I say that the universal deluge that elevated the waters fifteen cubits above the highest mountains, is a miracle not to be performed by the laws of nature with which we are acquainted, I say nothing but that which is very true. They who have been desirous of explaining the physical causes of this singular prodigy, have not been more happy that those who should attempt to discover by the laws of mechanics, how four thousand persons were fed with five loaves and three fishes. Natural philosophy has nothing in common with miracles; religion commands us to believe them, and reason forbids us to explain them.

Some have thought that the clouds alone are sufficient to inundate the earth; but these clouds are nothing more than the waters of the sea itself, continually raised from its surface in a rare and purified state. The more the air is charged with vapors, the more the waters are exhaled from our globe. So that the same quantity of water always subsists. If the clouds fall equally over all the earth, there is not an inch of ground inundated. If they are driven by the wind into one climate, and fall upon a square league at the expence of the other lands which remain without rain, there is no more than this square league deluged.

Others

Others have made the whole ocean leave its bed for the purpose of overflowing the earth. It is at present estimated that the sea at a medium may be about one thousand feet in depth. It is but fifty feet in many places, and much less near the shores. In supposing it every where about the depth of a thousand feet, we shall not be far from the truth.

Now, the mountains of Quito are elevated above the level of the sea more than ten thousand feet. It would therefore require more than ten oceans one upon the other, elevated upon the half of the surface of the globe, which is sea, and ten other oceans on the other half; and as the sphere would then have a greater circumference, four oceans more would be required to cover this enlarged surface; so that it would necessarily require twenty-four oceans at least to cover the tops of the mountains of Quito; and even if no more than four were necessary, as Dr. Burnet pretends, a philosopher must still be very much embarrassed with these four. Who would suppose that Burnet makes these waters boil, in order to increase their volume? But water in boiling never swells above a quarter beyond its usual volume. To what contrivances one is reduced, by attempting to explain that which we ought only to admire and respect.

Remarks on the Thoughts of Mr. Pascal.

HERE follow critical remarks which I have long since made on the thoughts of Mr. Pascal. I must request that you will not here compare me to Ezekias who wished to burn all the books of Solomon. I respect the genius of Pascal; but the more I respect him, the more I am persuaded that he himself intended to correct these thoughts which he had thrown upon paper for the purpose of reviewing them afterwards; and I admire the force of his mind while I combat some of his opinions.

It seems to me that the spirit in which Pascal wrote these thoughts was that of shewing man in an odious light.

light. He stimulates himself to paint all as wicked and unhappy. He writes against human nature nearly in the same manner as he writes against the Jesuits. He imputes to the essence of our nature that which belongs only to peculiar men; and satyrizes mankind with great eloquence. I am daring enough to take the part of humanity against this sublime misanthrope. I can venture to affirm that we are neither so wicked nor so unhappy as he makes us. I am moreover well persuaded that if he had followed in his intended work the design that appears in his thoughts, he would have made a book full of eloquent paralogisms and falsities admirably deduced. It is even said that all the authors who have lately written in defence of the christian religion are more adopted to scandalize than edify. Do these authors pretend to know more than Jesus Christ and his apostles? This is attempting to support an oak by enveloping it with roses; the useless roses may be removed without doing any damage to the tree. I have chosen at discretion some of the thoughts of Pascal. and have placed my answer underneath. To conclude, we cannot too forcibly repeat how absurd and cruel it is to make a party affair of this examination of the thoughts of Pascal. I have no party but the truth. I am of opinion, and it is true, that it is not for metaphysics to prove the christian religion, and that reason is as much inferior to faith as finite is to infinite. Our present business relates to reason; and reason is a thing of so small importance with men that it is not worth the pains of being concerned about it.

I. Thought of Pascal.

THE greatness and the misery of man are so visible, that it is necessary that the true religion should teach us that there is in man a certain principle of greatness and a certain principle of misery; for it is necessary that the true religion should be intimately acquainted with our nature; that is, that it should be acquainted with all
its

its greatness and with all its misery, and the cause of the one and the other; it is moreover necessary that it should explain the reason of the astonishing contrarieties which are seen in human nature.

1. This mode of reasoning appears false and dangerous; for the fables of Prometheus and Pandora, the Androgynæ of Plato, the dogmas of the ancient Egyptians, and those of Zoroaster, do likewise give reasons for these contrarieties. The christian religion will not be less true even though these ingenious conclusions were not deduced from it, which only serve to exhibit the genius of their author. It is necessary for the truth of a religion that it should be revealed, and not that it should give a reason for these pretended contrarieties; religion is no more given to teach metaphysics than astronomy.

II.

Let us examine by this test all the religions in the world, and let us see whether there be any other except the christian system which is satisfactory. Is it that which the philosophers teach, when they offer to us as all good; a good which is in ourselves? Is this the true good?

2. Philosophers have not taught religion, and we are not here concerned to oppose their philosophy. No philosopher ever said that he was inspired by God; for if so he would have ceased to be a philosopher and become a prophet. Our present business is not to determine whether Jesus Christ ought to be preferred to Aristotle; it is to prove that the religion of Jesus Christ is the true, and those of Mahomet, Zoroaster, Confucius, Hermes, and all the rest are false. It is not true that philosophers propose to us as the sole good, a good that is in ourselves. Read Plato, Marcus Aurelius, Epictetus; they teach that we should aspire to be reunited to the divinity from whence we emanated or proceeded.

III.

And nevertheless without this mystery, the most incomprehensible of all, we are incomprehensible to ourselves. The knot of our condition takes its turns and returns in

the abyſs of original ſin. So that man is more inconceivable without this myſtery than this myſtery is inconceivable to man.

3. What a ſtrange explanation! Man is inconceivable without the help of an inconceivable myſtery! It is enough to underſtand nothing of our origin without explaining it by a thing we underſtand as little. We are ignorant of the manner in which man is born, how he increaſes, digeſts, thinks, or how his members are obedient to his will. Would it be allowed me to explain theſe obſcurities by an unintelligible ſyſtem? Would it not be more to the purpoſe to ſay I know nothing? A myſtery never was an explanation, but a divine and inexplicable thing.

What would Mr. Paſcal have answered to a man who ſhould have ſaid, I know that the myſtery of original ſin is an object of my faith and not of my reaſon. I know very well without the help of myſteries what man is; I ſee that he comes into the world like other animals; that the delivery of mothers is more painful in proportion as they are more delicate; that women and female animals ſometimes die in the birth of their young; that there are ſometimes infants badly organiſed, who live deprived of one or two ſenſes, and of the faculty of reaſon; that thoſe which are the beſt organiſed have the moſt lively paſſions; that the love of ſelf is equal with all men, and that it is as neceſſary to them as the five ſenſes; that this ſelf love is given us by God for the preſervation of our being, and that he has given us religion to regulate this ſelf-love. That our notions of things are juſt or unjuſt, obſcure or luminous, according as our organs are more ſolid or rare, and according as our paſſions are more or leſs intereſted; that we depend in every thing on the air which ſurrounds us, on the aliments we take, and that in all this there is nothing of contradiction.

Man in this reſpect is not an enigma as you deſcribe him for the ſake of the pleaſure of explaining it. Man appears to be in his proper place in nature, ſuperior to animals which he reſembles in his organs, inferior to other beings whom probably he reſembles in thought.
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He is, like every thing we behold, a mixture of good and bad, of pleasure and pain. He is provided with passions to impel him to action, and with reason to govern and regulate those actions. If man were perfect he would be God, and these pretended contradictions are the necessary ingredients which enter into the composition of man, who like the rest of nature is what he ought to be. This is what reason might say; therefore it is not reason which informs men of the fall, but faith alone, to which recourse is to be had.

IV.

Let us trace the inducements of our motions, let us observe ourselves and see if we do not find the living characters of these two natures.

Can so many contradictions be found in a simple subject?

This duplicity of man is so visible, that there have been those who have thought that we have two souls; a simple subject appeared to them incapable of such and so sudden variations from a boundless presumption to a horrible depression of spirits.

4. This thought is entirely taken from Montagne as well as many others. It is to be found in the Chapter on the Inconstancy of our Actions. But the wise Montagne explains himself like a man who is in doubt. Our different wills are not contradictions of nature, and man is not a simple subject. He is composed of a numberless set of organs. If only one of these organs be a little changed, it is necessary that a change should follow in all the impressions received in the brain, and that the animal consequently should have new thoughts and desires. It is very true that we are sometimes oppressed with sadness and sometimes inflated with presumption, and that ought to be the case when we find ourselves in opposite situations. An animal which its mother caresses and feeds, and another which is put to death by slow degrees in a dissection, experience very different sensations: so it is with us; and the differences we find in ourselves are so far from contradictory, that it would be contradictory if they did not exist. Those fools who affirmed that we
have

have two souls might with equal reason have given us thirty or forty ; for a man under the influence of a violent passion has frequently thirty or forty different ideas of the same thing, and ought necessarily to have them according as the object presents itself under different appearances. This pretended duplicity of man is an idea as absurd as metaphysical ; I should like as well to say, that the dog that fawns and bites, is double ; that the fowl which has so much care of its young and afterwards abandons them to that degree as not to know them, is double ; that the glass which represents different objects, is double ; and that the tree which is sometimes loaded with leaves, and sometimes bare, is double. I confess that man in a certain sense is inconceivable ; but all the rest of nature is so likewise ; and the apparent contradictions are not more numerous in man than in the rest of nature.

V.

Not to wager that God is, is to wager that he is not. Which side then will you take ? Let us weigh the loss and gain, by taking the side of believing that God exists ; if you win, you win every thing ; if you lose, you lose nothing. Wager then, without hesitation, that he exists ; certainly I wish to win, but the wager is perhaps too great. Let us see, since there is a like hazard of gain or loss, supposing you had two only lives to gain for one, you may still lay the wager.

5. It is evidently false to say, that not to wager that God is, is to wager that he is not, for he who doubts and desires to be instructed, most assuredly wagers neither on the one side, nor the other. Besides this article seems rather indecent and puerile ; the idea of play, and of loss and gain does not suit the gravity of the subject. And again, the interest I have to believe a thing is no proof of its truth. You promise me the empire of the world if I join in your opinion. I wish therefore with all my heart that you may be right ; but till you have proved the truth of your opinion to me, I cannot coincide with it. Begin, we might say to Pascal, by convincing my reason : it is without doubt my interest that there should be a God, but if in your system God is
come

come for so very small a number of people, if the small number of the elect is so alarming, if I can do nothing of myself, tell me I pray what interest I have to believe you? Have I not an evident interest to be persuaded to the contrary? With what face can you pretend to point out to me an infinite happiness, to which of a million of men scarce one has a right to aspire? If you wish to convince me, you must attempt it in another manner, and not talk at one time of games of chance, wagers and the like, and at another time discourage me by planting thorns in the way which I wish and ought to follow. Your reasoning would serve only to make Atheists, if the voice of all nature did not proclaim the existence of a God with as much force as these refinements have of weaknels.

VI.

When I behold the blindness and misery of men, and these astonishing contrarieties which discover themselves in his nature, when I observe the whole universe mute, and man without light, abandoned to himself, and, as it were, bewildered in this corner of the universe, without knowing who has placed him here, and for what purpose, or what will become of him after death, I am struck with horror, like a man carried while asleep into a desert and frightful island, who wakes without knowing where he is or how to get out of the place; when I make these reflections, I am astonished that we do not give ourselves up to despair in a state so miserable.

6. While reading this reflection I received a letter from a friend, who lives in a very distant country*. Observe what he says,

“ I am here as you left me, neither gayer nor sadder,
 “ richer nor poorer, in the enjoyment of perfect health,
 “ and in possession of every thing that renders life agree-
 “ able; without love, avarice, ambition or envy; and
 “ as long as this continues, I shall boldly call myself a
 “ very happy man.”

* He has since been appointed to an embassy, and is become a man of great consequence. His letter, which is still in being, bears date in the year 1738. V.

There are many men as happy as him. It is with men as with other animals ; one dog sleeps and eats with its mistress ; another turns the spit and is as much contented ; another becomes mad and is killed. For my part, when I regard Paris or London, I see no reason to give myself up to the despair Mr. Pascal mentions ; I behold a city that in no respect resembles a desert island, but populous, opulent, and well governed, where men are as happy as is consistent with human nature. What wise man would fall into despair because he is ignorant of the nature of thought, because he knows only a few of the attributes of matter, and because God has not revealed his secrets to him ? It would be as proper to despair because we have not four legs and two wings. Why should we be struck with horror at our being and state ? Our existence is not so miserable as we are tempted to believe. To regard the universe as a jail, and all men as criminals on the eve of execution, is the idea of a fanatic. To believe that the world is a delightful place, in which we ought to have nothing but pleasure, is the dream of a Sibarite. To think that the earth, men, and animals are what they ought to be in the order of Providence is, I apprehend, the act of a wise man.

VII.

The Jews are of opinion, that God will not leave the other nations for ever in this darkness ; but that a deliverer will come for all men ; that they are placed in the world to announce his coming, that they are expressly formed to be heralds of this great event, and to call all people to unite themselves to them in the expectation of this deliverer.

7. The Jews have always expected a deliverer ; but this deliverer is for them and not for us ; they expect a deliverer who shall render them masters of the Christians. And we hope that the Messiah will unite the Christians and Jews together. With regard to this great event, their opinion is precisely the contrary to ours.

VIII.

The law by which this people is governed is altogether the most ancient law in the world, the most perfect
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and the only one that has been preserved without interruption in any state. This is what Philo, the Jew, shews in several places, and Josephus with great skill against Appion, where he makes it appear to be so ancient, that even the name of *law* was not known to the ancients till a thousand years after its promulgation: in-
 somuch that Homer, who has spoken of so many nations, never makes use of the term; and it is easy to judge of the perfection of this law simply by reading it, by which we see, that all events and contingencies are provided for with so much wisdom, equity, and judgment, that the most ancient Greek and Roman legislators, having some knowledge of it, have drawn their principal laws from thence; as appears from those which are called the twelve tables, and from other proofs which Josephus points out.

8. It is very false that the law of the Jews is the most ancient, since before the time of their legislator, Moses, they dwelt in Egypt, the land most renowned for its sage laws, according to which their kings had been judged after death. It is very false that the word *law* is not to be found in Homer; he speaks of the laws of Minos in the *Odyssey*. The word *law* is found in Hesiod; and even if the word were to be found neither in Homer nor Hesiod, it proves nothing. There have been ancient kingdoms, kings, and judges, and consequently laws. Those of the Chinese are much anterior to Moses.

It is likewise very false that the Greeks and Romans have taken their laws from the Jews. This could not happen at the foundation of their republics, as they were then of necessity unacquainted with the Jews. Neither could it be in the time of their grandeur, as they then had a contempt for these Barbarians, which is well known over all the earth. Observe how Cicero treats them in speaking of the capture of Jerusalem by Pompey. Philo avows, that before the translation of the Septuagint, no nation was acquainted with their books.

IX.

This people is still admirable for its sincerity. They preserve with love and fidelity the book in which Mo-
 ses

ses declares that they have been always ungrateful to God, and that he knows that they will be yet more so after his death; in which he calls heaven and earth to witness against them; and affirms that he has spoken enough to them; that at length God being irritated against them, will disperse them among all the people of the earth; that as they have angered him by worshipping gods that were no gods, he will vex them by calling a people that was not his people. Nevertheless this book, which disgraces them in so many respects, is preserved by them at the expence of their lives. This sincerity, which is without example in the world, does not originate from a natural cause.

9. This sincerity has its examples every where, and its origin in nature. The pride of every Jew is interested to believe, that it is not his detestable politics, his ignorance of the arts, his rudeness, that has destroyed him; but that it is the anger of God that punishes him; he reflects with satisfaction that miracles have been necessary to depress him, and that his nation is always the beloved of God, who chastises it. Let a preacher ascend the pulpit, and say to the French, "You are a set of wretches that have neither courage nor conduct; you have been beat at Hockstet and Ramillies, because you did not know how to defend yourselves," he would get himself pelted. But if he were to say, "You are Catholics cherished by God; your sins have irritated the eternal Being, who delivered you into the hands of the Heretics at Hockstet and Ramillies; but when you return to the Lord he will prosper your courage at Denain." These words would gain respect and esteem from his audience.

X.

If there be a God, we ought to love him only and not the creatures.

10. We ought to love the creatures, and that with great tenderness; we ought to love our country, our wives, our fathers, and our children: this is so requisite that God has caused us to love them in spite of ourselves. The contrary principles are proper to form in-
human

human reasoners; and this is so true that Pascal, abusing this principle, treated his sister with harshness and refused her services, lest he should appear to love a creature; thus it is written in his life. If this were duty and justifiable, what would become of human society?

XI.

We are born unjust; for every one tends to himself or his own advantage, which is contrary to all order. We ought to incline to the general good, and the tendency towards self is the origin of all disorder in war, in government, in œconomy, &c.

II. This is according to all order; it is as impossible that a society should be formed and subsist without self-love, as that we should beget infants without concupiscence, or support ourselves without appetite. It is the love of ourselves that assists the love of others; it is by our mutual wants that we become useful to the human race. It is the foundation of all commerce and the eternal bond that connects mankind. Without this no art would have been invented, nor any society of ten persons formed. It is this self-love which every animal has received by nature, that reminds us to pay a proper respect to that of other. The laws direct this self-love, and religion perfects it. It is true that God might have formed creatures solely attentive to the good of others. In this case merchants would have gone to the Indies from motives of charity, and masons would have built houses for the purpose of doing pleasure to their neighbour. But God has established things otherwise; therefore let us not accuse the instinct he has given us, but use it according to his commands.

XII.

The concealed sense of the prophets cannot lead to error, and no nation, less carnal than they, could mistake it.

For when good things are promised in abundance, what hindered them from understanding them to be real good things, if their covetousness had not determined them to the sense of worldly goods?

12. In good faith, could the most refined people in the world have understood it otherwise? They were slaves to the Romans; they expected a deliverer who should make them victorious, and cause Jerusalem to be respected over all the world; how, with the light of reason, could they see this vanquisher, this monarch in one of their countrymen, born in obscurity and poverty, and condemned to the punishment of slaves? How could they understand by the name of their capital, a heavenly Jerusalem, they to whom the decalogue had not even mentioned the immortality of the soul? How could a people, so attached to their law, discover in those prophecies which made no part of their law, a God concealed under the form of a circumcised Jew, who, by his new religion, had overthrown and rendered abominable circumcision and the sabbath, the sacred foundations of the Jewish law? Let us adore God, without endeavouring to penetrate into his mysteries.

XIII.

The time of the first coming of Jesus Christ is foretold; the time of the second is not, because the first coming was to be obscure and concealed; instead of which the second coming will be attended with great glory, and so manifest, that even his enemies will acknowledge it.

13. The time of the second coming of Jesus Christ has been foretold still clearer than the first. Pascal had evidently forgotten that Jesus Christ, in the twenty-first chapter of St. Luke, says expressly, "When you behold an army environing Jerusalem, know that desolation is at hand; Jerusalem shall be thrown to the ground, and there shall be signs in the sun, in the moon, and in the stars, and the waves of the sea shall make a great noise. The powers of heaven shall be broken, and then shall be seen the Son of Man coming on a cloud with great power and majesty. This generation shall not pass away till these things be accomplished." Nevertheless the generation passed away, and these things were not accomplished. Whatever time St. Luke wrote, it is certain that Titus took Jerusalem, and

and that neither signs in the heavens nor the Son of Man in the clouds were seen. But however, though this second coming is not arrived, if this prediction is not fulfilled, it becomes us to be silent, not to question Providence, but to believe all that the church teaches.

XIV.

The Messiah, according to the carnal Jews, ought to be a great temporal prince. According to the carnal Christians he is come to dispense us from loving God, and to give us the sacraments, which effect every thing without us; neither the one nor the other is either the Christian or Jewish religion.

14. This article is much rather a piece of satire than a Christian reflection. It is evident that he aims at the Jesuits; but, in fact, has any Jesuit affirmed that Jesus Christ is come to dispense us from loving God? The dispute concerning the love of God is purely a dispute of words, like many other quarrels of science which have caused such lively hatred and such dreadful misfortunes. This article is likewise faulty in another respect, which is in supposing that the expectation of a Messiah was a point of religion among the Jews: it was only a comforting opinion that was received by them. The Jews hoped for a deliverer; but they were not commanded to believe this as an article of faith. All their religion was shut up in the books of the law. The prophets were never regarded as legislators by the Jews.

XV.

To examine the prophecies it is necessary to understand them; for if we believe they have but one sense, it is certain that the Messiah is not yet come; but if they have two senses it is certain that he is come in Jesus Christ.

15. The christian religion founded in truth itself has no need of doubtful proofs. Now if any thing could shake the foundations of this holy and reasonable religion, it is this sentiment of Mr. Pascal. He wishes that every thing in the scripture should be understood to have two senses, but a man who had the misfortune to be incredulous might say to him: he who gives a double
sense

sense to his words wishes to deceive, and this duplicity is always punished by the laws: how then can you without blushing admit that in God which is detestable in man? What do I say? With what contempt and indignation you treat the oracles of the Pagans because they had two senses? When a prophecy is literally accomplished, will you presume to maintain, that it is false because it does not answer to a mystical sense which is given to it? Doubtless no, for that would be absurd. How then does a prophecy that is not really accomplished become true in a mystical sense? What! if true you cannot render it false, and if false you can render it true? This is a strange difficulty. We must hold to the faith alone in these difficulties, which is the only method to end the dispute.

XVI.

The infinite distance from body to spirit, typifies the infinitely more infinite distance between spirit and charity; for charity is supernatural.

16. It is to be believed that Mons. Pascal would not have inserted this unintelligible thought in his work if he had had time to review it.

XVII.

The most apparent weak places have a degree of force to those who take things in a proper light; for example, the two genealogies of St. Matthew and St. Luke; it is evident that they were not made in concert with each other.

17. Ought the editors of the Thoughts of Pascal to have printed this thought, since the explanation of it alone is perhaps capable of doing injury to religion? What good purpose does it answer to say, that these genealogies, these fundamental points of the christian religion, contradict each other entirely, without saying in what manner they may be reconciled? The antidote should have been offered with the poison. What should we think of an advocate who should say, my client contradicts himself, but this weakness ought to have force with those who take things in a proper light? What should we say to two witnesses who contradict each other?

other? We should say, you are not in concert or previously agreed with each other, but certainly one of you affirms a falsehood.

XVIII.

Let us no longer be reproached for want of clearness, since we confess it ourselves; but let the truth of religion be acknowledged by the small light we have and the indifference we have to know it.

18. These are strange marks of truth which Pascal offers. What other marks has falsehood? What? is it sufficient in order to be believed, to say, *I am obscure, I am unintelligible*? It would be much wiser to present to view the lights only of the faith and not these learned obscurities.

XIX.

If there were but one religion God would be too manifest.

19. What! do you say, that if there were but one religion God would be too manifest? You have surely forgot how frequently you have said, that the time will come when there shall be but one religion. According to you, God will then be too manifest.

XX.

I say that the Jewish religion consists in none of these things, but only in the love of God, and that God reprov'd every thing else.

20. What! has God reprov'd those things which himself has commanded to the Jews with so much care and with so prodigious a detail? Is it not more proper to say that the law of Moses consisted in love and adoration? To reduce every thing to the love of God may probably arise less from the love of God, than from the hatred which every Jansenist has for his Molinist neighbour.

XXI.

The choice of a profession is an affair of the utmost importance to life; chance directs us; it is custom that makes masons, bricklayers, soldiers, &c.

21. What can then determine soldiers, masons and all mechanic workmen, if not that which is called chance and custom? It is only to the arts that require genius

that one determines oneself, but for the occupations that every one is capable of following, it is very natural and reasonable that custom should determine.

XXII.

Let any one examine his thoughts and he will find them always occupied with the past and the future. We scarcely, if at all, think of the present, or if we do, it is only to gain light for future conduct. The present is never our employ; the past and the present are our means, and the future alone our object.

22. It is false that we do not think of the present; our attention is directed to it in studying the works of nature, and in performing all the functions of life our thoughts are very much fixed on the future. Let us thank the author of nature, that he has given us this instinct which inclines us perpetually to the future. The most precious treasure that man possesses which mollifies our chagrin, and which paints future pleasures to the imagination while we possess the present. If men were so unfortunate as to busy themselves only with the present, we should neither sow, nor plant, nor provide any thing, we should be in the greatest want in the midst of this false enjoyment. How could a genius like that of Mr. Pascal give into so common place, and so false a notion as this? Nature has ordained that every man should enjoy the present in supporting himself, in begetting children, in listening to agreeable sounds, in employing his faculty of thought and perception; and that in quitting these situations, or frequently in the middle of them he should think of the future, without which thought he would perish with misery. Infants and fools think only of the present; is it proper that we should resemble them?

XXIII.

But when I have considered things more nearly, I have found that this continual distance at which men are from repose and remaining with themselves, arises from a very effective cause, namely, the natural unhappiness of our feeble and mortal condition, which is so miserable that nothing can console us, since
nothing

nothing can hinder us from thinking, and we see nothing but ourselves.

23. The expression to see nothing but ourselves is without meaning. What kind of man must that be who is supposed not to act and to contemplate himself? I not only say that this man would be an idiot and useless to society, but I affirm that this man could not exist. For what is it that he contemplates? his body, his feet, his hands, his five senses? He must then either be an idiot, or he must make use of them. Suppose him not to contemplate these but to attend only to his faculty of thought. He cannot contemplate this faculty but by exercising it. Now he will think of something, either the ideas already present, or will compose new ones; and he can have no ideas but from without. He is therefore necessarily employed either by contemplating his senses or his ideas; and consequently is either out of himself or an idiot. Yet more, it is impossible for human nature to remain in this imaginary stupidity; it is absurd to think and ridiculous to assert it. Man is born for action as the flame tends upwards and the stone downwards. To be unemployed and not to exist are effects of the same kind to man. The whole difference consists in employments that are calm or tumultuous, dangerous or useful.

XXIV.

Men have a secret instinct which impels them to seek diversion and employment from without, which arises from a perception of their continual misery; and they have another instinct which is a remainder of the greatness of their primitive nature, which informs them that happiness is to be found only in repose.

24. This secret instinct being the first principle and the necessary foundation of society, proceeds rather from the goodness of God, and is rather the instrument of our happiness than a perception of our misery. I do not know what our first parents did in the earthly paradise; but if they had each thought only of self, the existence of the human race, had been very hazardous. It is not absurd to think that they were provided with

perfect senses, that is to say, perfect instruments of action for the sole purpose of contemplation? And is it not pleasant that men of sense should imagine that indolence is a title of grandeur, and action a degradation of our nature?

XXV.

When Cyneas said to Pyrrhus, who proposed to enjoy repose with his friends after having conquered the greatest part of the world, that it would be better to promote his own happiness by enjoying repose at that present time without seeking it thro' so many fatigues; he gave him a council subject to many difficulties and which was scarce more reasonable than the intention of the ambitious youth. The one and the other supposed that man was able to content himself with his present enjoyments without filling the void in his heart with imaginary hopes: which is false. Pyrrhus could be happy neither before nor after having conquered the world.

25. The example of Cyneas makes a good appearance in the satires of Boileau, but not in a book of philosophy. A good king may be happy at home; and tho' Pyrrhus is held forth to us as a fool, the argument has nothing to do with the rest of mankind.

XXVI.

We must then acknowledge that man is so unhappy, that he is even disgusted without any strange or external cause, by the sole state of his condition.

26. Would it not be equally true to say, that man is happy in this respect, and that we are under the highest obligations to the author of nature, who has united disgust to inaction in order to force us by that means to become useful to our neighbour and ourselves.

XXVII.

Whence comes it that that man who has lately lost his only son, and who borne down with law-suits and quarrels, was this morning so troubled, thinks no more of it at present? Do not be surprised; he is entirely employed in observing the course of a stag which his dogs have

closely pursued these six hours. No more is necessary for man, how full soever he may be of sorrow, if he can be prevailed upon to enter into some diversion, he becomes happy for the time.

27. This man acted very properly; dissipation is a more certain remedy against grief, than quinquina for a fever; let us not blame nature for this, who is ever ready to assist us. Louis XIV. went a hunting the day he had lost one of his children; and he acted very wisely in so doing.

XXVIII.

Let us imagine a number of men in chains, and condemned to death, some of which are every day executed in the sight of the others; they who remain see their own condition in that of their fellows, and regarding each other with grief and without hope, expect their turn to arrive. This is the image of the condition of men.

28. This comparison assuredly is not just. Wretches in chains who are executed one after the other are unhappy, not only because they suffer, but likewise because they experience that which other men rare not subject to. The natural situation of man is neither to be chained nor put to death; but all men are made like animals and plants, to grow, to live a certain time, to produce their like, and to die. In a satire we may shew the dark side of man as much as we please; but when we make the least use of reason, we must confess that of all animals, man is the most perfect, the most happy, and that which lives the longest; for that which is reported of stags and ravens is fabulous. Instead therefore of being shocked and complaining of our unhappiness and the shortness of life, we ought to be surprised, and to felicitate ourselves on our happiness, and the length of its duration. To reason merely as a philosopher, I may venture to affirm that there is much pride and rashness in pretending that by our nature we ought to be better than we are.

XXIX.

For in short, if man had not been corrupted, he would have enjoyed truth and happiness with assurance, &c. so

evident it is that we have been in a state of perfection from which we are fallen.

29. It is certain, from faith and revelation, things above the comprehensions of men, that we are fallen; but nothing is less apparent to reason. For I wish to be informed whether God could not without derogating from his justice, create man such as he is at present; and has he not in fact created him for the purpose of becoming what he is? Is not the present state of man a benefit bestowed by the Creator? Who has informed you that God owes you more than he has given? Who has told you that your being requires more knowledge and happiness? Who has told you that more of either is consistent with that being? You are astonished that God has made man so bounded, so ignorant and so partially happy; but why are you not astonished that he has not formed you more bounded, more ignorant and less happy? You complain of a life so short, and so unhappy? Thank God that it is not more so. What then? According to you, to reason consistently, it is necessary that all men should accuse Providence except metaphysicians, who reason on original sin.

XXX.

Original sin is folly in the sight of men; but it is given as such.

30. By what most palpable contradiction can you then say that this original sin is manifest? Why do you say that every thing advises us of it? How can it at the same time be folly and demonstrated by reason?

XXXI.

The sages among the Pagans who have taught that there is but one God have been persecuted, the Jews were hated, and the Christians yet more.

31. They have sometimes been persecuted, in the same manner as a man would now be who should attempt to inculcate the adoration of a God independant of the received modes of worship. Socrates was not condemned for having affirmed that there was but one God, but because he set himself against the external forms of worship established in Greece, and had imprudently
created

created himself some very powerful enemies. With respect to the Jews, they were hated, not because they believed in one God, but because they ridiculously hated other nations; because they were barbarians, who slew without pity their vanquished enemies; and because tho' a vile, superstitious and ignorant people, without arts and without commerce, they despised the most polished nations. As to the Christians, they were hated by the Pagans, because they attempted to overthrow the religion of the empire, which at length they accomplished; as the Protestants have made themselves masters in the same countries in which they were long hated, persecuted and massacred.

XXXII.

How many stars have been discovered by glasses which were unknown to philosophers before? The scripture was rashly attacked, because it affirms in so many places, the countless number of the stars. They are in number, said they, no more than one thousand and twenty-two we are well assured.

32. It is certain that the holy scripture in matters of philosophy is always adapted to the received notions; thus it supposes the earth to be immoveable, the sun to rise and set, &c. It is not by an astronomical refinement that it says the stars are numberless, but to accommodate itself to vulgar ideas. In fact, tho' our eyes discover no more than one thousand and twenty-two, and that with much difficulty, yet when we regard the sky fixedly, the sight is dazzled and confused, and we think we see an infinite number. The scripture speaks then according to this vulgar prejudice; for it was not given for the purpose of making us philosophers; and it is very likely that God neither revealed to Habbakuk nor Baruch, nor Micah, that an Englishman named Flamsteed should in a future age make a catalogue of near three thousand stars, observed with the telescope. Observe, I beseech you, the consequence which may be deduced from this sentiment of Pascal. If the authors of the Bible have spoken of the great number of stars as knowing the cause they were then inspired with regard to

to natural philosophy. And how could such great philosophers say that the moon stood still over Ajalon, and the sun over Gibeon in Palestine? That grain must rot before it can sprout forth and grow, with an hundred other things of the same nature? Let us therefore conclude that we are not to seek physics but morality in the Bible, that it is meant to form the Christian and not the philosopher.

XXXIII.

Is it courage in a dying man in his weakness and agony to affront the Almighty and eternal God?

33. It has never happened, and cannot happen, unless in a violent transport of madness, that a man should say, I believe a God, and I defy him.

XXXIV.

I readily believe histories, whose witnesses submitted to death in proof of their testimony.

34. The difficulty is not only to know whether we ought to believe witnesses who died to confirm their testimony, as many fanatics have done; but likewise whether these witnesses really died for that purpose; whether their depositions are preserved, whether they dwelt in the countries in which they are said to have died. Why has not Joseph, who was born at the time of the death of Christ, Joseph the enemy of Herod, Joseph so little attached to Judaism, why has not this Joseph spoken a word of all this? Could Mr. Pascal have explained this he would indeed have been famous.

XXXV.

The sciences have two extremities that touch each other. The first is that pure natural ignorance in which all men are born. The other extremity is that at which great minds arrive, who having passed through all that man can know, discover that they know nothing, and find themselves in the same ignorance with which they set out.

35. This thought appears to be a sophism, and the fallacy consists in the word *ignorance*, which is used in two different senses. He who can neither write nor read is ignorant; but a mathematician who is ignorant of the
hidden

hidden principles of nature, is not at the point of ignorance at which he set out when he began to learn to read. Mr. Newton knew not why man can move his arm when he wills, but he was not less knowing in other things on that account. He who is ignorant of the Hebrew, but knows the Latin, is knowing or learned in comparison with him who knows only the French.

XXXVI

The faculty or power of being pleased by diversion, is not that in which happiness consists; for diversion comes from without, and is therefore dependant; consequently it is liable to be troubled by a thousand accidents which cause inevitable afflictions.

36. This is as if we should say, that one cannot be unhappy without being overwhelmed with grief, for it is produced from without. He is actually happy who is in possession of pleasure, and this pleasure cannot arise but from without; we cannot have either ideas or sensations but from without, in like manner as we cannot nourish our bodies but by admitting into them foreign substances, which are changed into our substance.

XXXVII.

Extreme wit is accused of folly as well as the extreme want of it; nothing passes for good but mediocrity.

37. It is not extreme wit but extreme vivacity and volubility of spirits that is accused of folly; the extreme of wit, is extreme judgment and propriety, diametrically opposed to folly. The extreme want of wit is a want of conceptions and of ideas; it is not folly but stupidity. Folly is a derangement of the organs which causes many objects to be contemplated in too rapid a succession, or which fixes the imagination on a single object with too much application and violence. Neither is it mediocrity that passes for good, it is the being distant from too opposite vices, it is what we term the just medium and not mediocrity. This remark and several others of the same kind are not made but for the sake of giving clear ideas: rather to explain than contradict,

XXXVIII.

XXXVIII.

If our condition were really happy, it would not be necessary to divert ourselves from thinking of it.

38. Our condition is precisely that of thinking of exterior objects with which we have a necessary connection. It is false to affirm that man may be diverted from thinking on the human condition; for to whatever he may apply his mind, he applies it to something that is necessarily connected with his condition; and I repeat, that to think of one's self is to think of nothing; it is to be observed that I say nothing at all. Far from persecuting a man from thinking on his condition, we never entertain him but with the agreeable circumstances relating to that condition. To a learned man we speak of science and reputation, to a prince of that which relates to his grandeur; and to every man we speak of pleasure.

XXXIX.

The higher and lower orders of mankind have the same accidents, the same causes of disturbance, and the same passions. But the one are at the top of the wheel and the others near the center, and therefore less affected by its movements.

39. It is false that the lower are less agitated than the higher orders of mankind. On the contrary, their despair is more lively, because they have fewer resources. Of an hundred persons who kill themselves at London and elsewhere, ninety-nine are of the lower order, and scarce one of an elevated condition. The comparison of the wheel is ingenious and false.

XL.

We do not teach men to be honest, and we teach them every thing else; and nevertheless they value themselves upon knowing nothing but what they have learned.

40. Men are taught to be honest, without which few would be so. Suffer your son in his infancy to take whatever falls into his hands, and at fifteen he will rob on the highway. Praise him for a lye, and he will become a false witness. Flatter his passions and he will
certainly

certainly become debauched. Men are taught every thing not excepting virtue and religion.

XLI.

How ridiculous is the project of Montagne to draw his own picture! and that not slightly, and contrary to his own maxims, as it may happen to any one to transgress, but in consequence of his own maxims and by a first and principal design! For to say silly things by chance or weakness is a common fault; but to say them by design, and those so ridiculous as the present, is insupportable.

41. What a charming project it was of Montagne to paint himself with that openness and simplicity that he has done! He has painted human nature itself. If Nicole and Mallebranch had always spoken of themselves they would not have succeeded. But a country gentleman of the age of Henry III. who is wise in an age of ignorance, a philosopher in the midst of fanatics, and who under his own name paints our weaknesses and follies, is a man who will always be esteemed.

XLII.

When I have reflected on the cause why we give so much credit to impostors, who affirm that they have remedies, so that we frequently trust our lives in their hands, it has appeared to me that the real cause is that there are true remedies; for it would not be possible that there should be so many pretenders, and that so much credit should be given to them, if there had been no true remedies. If there had never been any such, and all ills were incurable, it is impossible that men should have imagined, that these impostors could give them, and still more that so many other men should have given credit to their boasting; in the same manner as if a man should boast that he could prevent death, no one would believe him because there is no instance of such an event. But as there have been many remedies which have been found to be true, by the experience of many great men, the belief of mankind is moved by that consideration; for the thing not being in general to be denied, since there are particular effects which are true, the people being inca-
pable

pable of distinguishing which are the true, believe them all. Thus that which causes so many false effects to be attributed to the moon is, that there are true ones, as the flux of the sea.

In like manner it appears evident to me, that there have not been so many false miracles, false revelations, or pretended incantations, but because there have been true ones.

42. The solution of this problem is very easy. Extraordinary physical effects are observed, and designing people pass them for miracles. Disorders are observed to increase at the full moon, and fools believed that the fever was stronger because the moon was full. A sick person who by the course of his disorder was getting better found himself well the day after he had eaten crawfish, and crawfish were concluded to be purifiers of the blood because they are red when boiled.

It seems to me that human nature has no need of truth to enable it to fall into error; a thousand false influences have been imputed to the moon before the least dependence was supposed to exist between her motion and the flux of the sea. The first man who was sick, believed without difficulty the first quack doctor; no one has seen the *loup-garou*, or ware-wolf, nor sorcerers, yet many have believed that they exist; no one has seen transmutation of metals, and many have been ruined by crediting the stories respecting the philosopher's stone. The Romans, the Greeks, the Pagans, did they believe the false miracles with which they were overspread, only because they had seen true ones?

XLIII.

The port regulates the course of a vessel; but where shall we find a similar point in morals?

43. In this single maxim received by all nations; do not that to another which you would not chuse to have done to yourself.

XLIV.

Some prefer death to peace, others prefer death to war. Every opinion may be preferred to life, the love of which appears so strong and so natural.

44. It

44. It is of the Calatans that Tacitus says in exaggeration, *ferox gens nullam esse vitam sine armis putant*. This warlike people thought that not to fight was not to live. But there is no nation of whom it is said or can be said that they prefer death to war.

XLV.

In proportion as a man possesses genius, the more he discovers that men are originals; common people do not perceive the differences between men.

45. There are few men truly original; almost all are governed, and think by the influence of custom and education. Nothing is so rare as a genius that takes a new path; but among the croud of men that march in company, every one has some little difference or peculiarity in his gait, which sharp sights can discover and observe.

XLVI.

It is easier to support death without thinking, than to think of death when in no danger.

46. It cannot be said that a man supports death easily, or the contrary, when he does not think at all. He who perceives nothing, supports nothing.

XLVII.

All our reasoning may be reduced to or comprized in yielding to sentiment or perception.

47. Our reasoning is reduced to yielding to sentiment in matters of taste, but not in matters of science.

XLVIII.

They who judge of a work by rule, are with respect to others, like as those who have a watch, are with respect to those who have not. The one says we have been here two hours; and the other replies, it is but three quarters of an hour: I look at my watch and say to the one, the time hangs heavy on your hands, and to the other, the time will not last the longer (for your knowledge of its escape).

48. In works of taste, in music, in poetry, in painting, it is taste which supplies the place of the watch; and he who judges by rule only judges badly.

XLIX.

XLIX.

Cæsar was too old, in my opinion, to set about conquering the world by way of amusement; this amusement was well enough for Alexander; he was a young man whom it would have been difficult to stop; but Cæsar ought to have been wiser.

49. It is commonly imagined that Alexander and Cæsar set out with a design of conquering the world; but that was not the case. Alexander succeeded Philip in the generalship of Greece, and was charged with the just enterprize of revenging the Greeks of the injuries done them by the king of Persia; he beat the common enemy, and continued his conquests as far as India, because the kingdom of Darius extended so far; in the same manner as the Duke of Marlborough would have come to Lyons had it not been for Marshal Villars. As for Cæsar he was one of the first men of the republic; and quarrelled with Pompey, as the Jansenists with the Molinists, and then the question was which should exterminate the other; a single battle in which there were not tenthousand men slain decided the whole. Besides this thought of Mr. Pascal is perhaps false in one sense. The maturity of Cæsar was necessary to extricate himself out of so many intrigues; and it is perhaps astonishing that Alexander at his age renounced pleasure to undertake so painful and fatiguing a war.

L.

It is diverting to consider that there are people in the world, who having renounced all the laws God and nature have yet prescribed laws to themselves to which they pay exact obedience, as for example, thieves &c.

50. This consideration is more useful than diverting; it proves that no society of men can subsist a single day without laws. In society as in play, rules are necessary for their very existence.

LI.

Man is neither an angel nor a brute; and the misfortune is, that he who attempts to make him an angel makes him a brute.

51. He who attempts to destroy the passions instead of regulating them, attempts to make the angel.

LII.

A horse does not seek to gain the admiration of his companion; it is true we observe some emulation between them on the course, but it is without consequence; for when returned to the stable, the heaviest and least beautiful does not give up his oats to another. It is not the same with men, their virtue is not satisfied with itself, and they are not content unless they gain by it some advantage over others.

52. The most awkward of men does not give up his bread to another, but the strongest takes it from the weaker; and among animals and men, the larger devour the smaller. Mr. Pascal is very right in saying, that that which distinguishes man from animals is, that he seeks the approbation of his fellow creatures: and this passion is the mother of talents and virtue.

LIII.

If man would begin by studying himself, he would see how incapable he is of going farther; how can he make a part comprehend the whole? He will perhaps aspire at least to know the parts with which he is related; but the parts of the world have all such an agreement and connection with each other, that I take it to be impossible to understand the one without the other, and without the whole.

53. It is not proper to dissuade men from the search of that which is useful by the consideration that he cannot know every thing.

Non possis oculis quantum contendere Lynceus;

Non tamen idcirco contemnas lippus inungi.

We are acquainted with many truths; we have discovered many useful inventions: let us therefore comfort ourselves, though we do not know the agreement which may subsist between a spider and the ring of Saturn, and continue to examine that which is within our reach.

LIV.

LIV.

If the lightning had struck low places, the poets and those who only reason on things of this nature would have wanted proofs

54. A comparison is no proof, neither in poetry, nor prose; in poetry it serves to embellish, and in prose it serves to explain and render things more sensible. Poets who have compared the misfortunes of the great to lightning which strikes the mountains, would have made contrary comparisons if the contrary had happened.

LV.

It is the composition of spirit and body which has occasioned almost all philosophers to confound the ideas of things, and to attribute to body that which belongs only to spirit, and to spirit that which can only consist or agree with body.

55. If we were acquainted with what spirit is, we might complain that philosophers have attributed to it that which does not belong to it; but we know neither spirit nor body; we have no idea of the one and our knowledge of the other is very imperfect, therefore we cannot determine what are their limits.

LVI.

As we say *poetical beauty*, we ought to say *geometrical beauty* and *medicinal beauty*; yet we do not use the terms; the reason is that we know well what is the object of geometry or of medicine; but we do not know in what consists that agreeableness which is the object of poetry; we do not know what natural model it is we ought to imitate, and for want of this knowledge, certain fantastical terms have been invented, as *golden age*, *miracle of our days*, *fatal laurel*, *bright star*, &c. which jargon is called *poetical beauty*. But if any one were to suppose a woman clothed after this model, he would see a beautiful girl covered with mirrors and chains of brass.

56. This is very false, we ought not to say geometrical nor medicinal beauty, because a theorem and a purge do not affect the senses agreeably, and we give the name of beauty to that which charms the senses, as music,

fic, painting, eloquence, poetry, regular architecture, &c. The reason which Mr. Pascal produces is likewise entirely false: we know very well in what the object of poetry consists, it consists in painting with force, neatness, delicacy and harmony: poetry is harmonious eloquence. Mr. Pascal must have had very little taste to affirm, that fatal laurel, bright star, and other silly things are poetical beauties; and the editors of these thoughts must have been people very little versed in the belles lettres to print a reflection so unworthy its illustrious author.

LVII.

A man does not pass in the world for a person skilled in verse unless he has (*mis l'enseigne*) professed himself to be a poet; nor for a person learned in the mathematics if he has not professed himself a mathematician; but truly accomplished people need no professions.

57. According to this thought, it must then be improper to have a profession, a distinguished talent, and to excel in it? Virgil, Homer, Corneille, Newton, de l'Hospital, gave proofs of their excellence. Happy is he who succeeds in an art and is known to others.

LVIII.

The opinions of the people are very just, for example, to have chosen diversions and the chase rather than poetry, &c.

58. This seems as if it had been left to the option of the people to play at bowls or make verses. But it is not so; they who have grosser organs seek pleasure in which the mind has no part: and they whose sentiments are more delicate wish for more refined pleasures. All the world must live.

LIX.

If the universe were to slay a man, he would still be more noble than that which kills him, because he knows that he dies, and of the advantage which the universe has over him, the universe knows nothing.

59. What is meant by the word *noble*? It is very true that my thought is quite another thing, for exam-

ple, than the globe of the sun: but is it well proved that an animal, because he has some thoughts, is more noble than the sun, which animates all that we know of nature? Is man competent to decide? He is both judge and party. We say that one work is superior to another in proportion to the pains it cost the workman, and the extent of its usefulness; but has it cost the Creator less to form the sun than to mould a little animal of about five feet high: Who reasons well or ill? Which of these two is the most useful to the world, the animal, or the sun which enlightens so many globes? And in what respect are certain ideas received in a brain superior to the material universe.

LX.

Let any condition be chosen at pleasure, and all the good and satisfactions be assembled that appear capable of contenting the human mind, if he who is placed in this state is without employment and diversion, and be suffered to reflect on himself, this languid felicity will not support him.

60. How can one assemble all the good and satisfactions about a man and at the same time leave him without employment and diversion? Is not this a very evident contradiction?

LXI.

Suppose a king to be left entirely alone, without any of the satisfactions of sense, without any care on his mind, without company, to reflect on himself at leisure; and we shall see that a king, who beholds himself, is a man full of miseries, and who feels them like other men.

61. Always the same sophism. A king who retires into himself to think, is then fully employed; but if he fixed his thoughts only on himself, saying to himself I reign, and no more, he must be an idiot.

LXII.

Every religion, which does not acknowledge Jesus Christ, is notoriously false, and miracles can avail nothing in its favor.

62. What is a miracle? Whatever idea we can form of it, it is a thing which God alone can do. Now, it is here supposed that God can work miracles for the support of a false religion; which deserves to be particularly enquired into; each of these questions might furnish a volume.

LXIII.

It is said, believe in the church; but it is not said, believe in miracles; because the latter is natural and not the former; precept is necessary to the one but not to the other.

63. Here is, I apprehend, a contradiction. On the one hand miracles on certain occasions ought to pass for nothing; and on the other we ought necessarily to believe in miracles; they are a proof so convincing that it has not been necessary to say any thing in their favor. This is certainly saying the *pro* and *con*, and that in a very dangerous manner.

LXIV.

I do not see that there is any more difficulty in believing the resurrection of the body and the delivery of a child by the virgin, than in believing the creation. It is more difficult to re-produce a man than to produce him at first.

64. We may find proofs of the creation by the help of reason alone; for in observing that matter was not produced of itself, and that motion is not possessed by it in its own nature, &c. we come to know that it ought necessarily to be created; but we do not come to know by reasoning that the body which is always changing ought one day to be renewed, such as it was in the time even in which it changed. Reason can no more conduct us to the knowledge that a man ought to be born without impregnation of the mother by coition. The creation is then an object of reason; but the two other miracles are objects of faith.

May 10, 1743.

I HAVE lately perused the Thoughts of Pascal which have not yet appeared. The Father des Mollets had them, written in the hand of this illustrious author, and they have been printed: they appear to me to confirm what I have said, that this great genius had thrown together all his ideas to correct a part and make use of the other, &c.

Among these last thoughts, which the editors of the works of Pascal had excluded from their collection, there appear many that merit preservation. And here follow some which, in my opinion, that great man ought to have corrected.

I.

Always when a proposition is inconceivable, it is not to be denied on that account, but the contrary is to be examined: and if it be found to be manifestly false, we may affirm the contrary, however incomprehensible it may be.

1. It seems to me that it is evident that two contraries may be false. An ox flies to the south with wings, an ox flies to the north without wings; twenty thousand angels have yesterday slain twenty thousand men, twenty thousand men have yesterday slain twenty thousand angels. These propositions are evidently false.*

II.

What vanity is the painting which draws admiration by the resemblance of things whose originals are not admired.

2. It certainly is not in the goodness of the character of a man, but in the resemblance that the merit of his portrait consists. We admire Cæsar in one respect, and his statue or figure on canvas in another.

III.

If physicians had not cassocks and slippers, if doctors had not square bonnets and large gowns they would ne-

* But they are not contrary. N.

ver have had that consideration or rank they possess in the world.

3. Yet physicians have not ceased to be ridiculous, nor have acquired any true consideration till they laid aside these liveries of pedantry. Doctors are not received in the polite world except when they are without the square bonnet and without arguments. There are even countries in which the magistracy makes itself respected without pomp. There are christian kings who are very well obeyed tho' they neglect the ceremony of consecration and coronation. In proportion as men became more enlightened, the apparatus became more useless, and it is now only for the lower order of mankind that it is sometimes necessary; *ad populum phaleras*.

IV.

According to the light of nature, if there be a God, he is infinitely incomprehensible, since having neither parts nor limits, he has no resemblance to us: we are therefore incapable of knowing either what he is or whether he exists.

4. It is strange that Pascal should think that we could discover original sin by reason, and should say that we cannot know by reason whether God exists. It is apparently the reading of this thought which induced father Hardouin to place Pascal in his ridiculous list of atheists. Pascal has evidently rejected this idea, since he combats it in many other places. In fact we are obliged to admit the truth of many things we cannot conceive. I exist, therefore something exists from all eternity is an evident proposition, nevertheless do we comprehend eternity?

V.

Do you think it impossible that God should be infinite without parts? Yes. I will then shew you an infinite and indivisible thing; it is a point moving every where with an infinite velocity, for it is in all places and every where entire and indivisible.

5. Here are four palpable falsehoods: 1. That a mathematical point should exist alone. 2. That it should

should move to the right and to the left at the same time. 3. That it should move with an infinite velocity; for there is no velocity so great that it cannot be augmented. 4. That it should be every where entire and indivisible.

VI.

Homer has composed a romance which he offers as such. No one doubts but that Troy and Agamemnon existed no more than the golden apple.

6. No writer ever called in doubt the Trojan war. The fiction of the golden apple does not destroy the truth of the fundamental parts of the narration. The *ampulla* or vessel for the holy oil, which is related to have been brought by a dove, and the *oriflamme* or royal standard of France, which is said to have been brought by an angel, do not prevent us from believing that Clovis really reigned in France.

VII.

I shall not here undertake to prove, by reasons drawn from nature, either the existence of God, or of the Trinity, or the immortality of the soul; because I do not think myself equal to the task of finding that in nature which is sufficient to convince hardened atheists.

7. Once more, is it possible that the great Pascal should not think himself equal to the task of proving the existence of a God?

VIII.

Opinions which are easily proved, please men so much naturally, that it is strange they should ever displease them.

8. Does not experience prove the contrary, that we have no credit in the minds of the people but by proposing to them difficulties and even impossibilities to do and to believe. The Stoics were respected because they overturned the notions common to human nature. Propose only reasonable things and the world replies, we knew as much before. It is not worth while to be inspired for the purpose of saying common things. But

command difficulty and impracticable things; paint the Deity always armed with thunder; and make his altars flow with blood; you will then be attended to by the multitude, and every one will say of you, he must be in the right, otherwise he could not promulgate such strange things with so much confidence.

I do not send you my other remarks on the thoughts of Mr. Pascal, as they would lead into too long discussions. The editors have wished to give as laws or maxims, thoughts, which probably Pascal threw on paper only as doubts. We must not take that for demonstration which he would have refuted himself upon consideration.

D I A L O G U E S.

Of the Embellishments of the City of Cachemire.

THE inhabitants of Cachemire are mild, light, and busied with trifles, as other people are with serious matters: they live like infants who never know the reason of what they are ordered to do, who murmur at every thing, are consoled by every thing, deride every thing, and forget every thing.

They have not naturally any taste for the arts. The kingdom of Cachemire has subsisted more than thirteen hundred years, without having had either true philosophers or true poets, passable architects, painters, or sculptors. They were long without manufacturers and commerce, insomuch that during a thousand years, when a Cachemirian marquis wished to have linen and a handsome doublet, he was obliged to have recourse to a Jew or a Banyan. At length, towards the beginning of the last age, there arose certain men in Cachemire who did not seem to be of the nation, and who, bred up in the knowledge of the Indians and Persians, carried reason and genius as far as they would go. The reigning sultan encouraged these great men, and, by the aid of a good visier, polished, adorned and enriched the kingdom. The Cachemirians received all his benefits with jokes, and wrote songs against the sultan, the minister, and the great men who enlightened them.

The arts afterwards languished at Cachemire. The fire which these great men of genius inspired by heaven had kindled, was covered with cinders. Nature seemed to be exhausted. The glory of the arts at Cachemire consisted in little more than the hands and feet. There were people of great skill and excellence who possessed the art of putting one foot before the other to the sound of instruments with a wonderful grace; others who every week invented an admirable fashion

fashion of adjusting a ribband; and, in short, excellent chymists, who by means of the essence of ham and other elixirs of that nature, in a few years could put a whole house into the hands of physicians and creditors. By these fine arts the Cachemirians arrived at the honour of furnishing all Asia with fashions, dancing masters and cooks.

Yet in the mean while much was said about rendering the capital more commodious, more proper, more healthful, and more beautiful than it was; but it never proceeded farther than words. A philosopher of Indostan, a great lover of the public good, and who to little purpose was ready to give his advice when the business was to render men more happy and improve the arts, passed thro' the capital of Cachemire; he had a long conversation with one of the principal Bostangis concerning the method of giving the city every thing it was in want of. The Bostangi agreed that it was shameful not to have a grand and magnificent temple like that of Pekin or of Agra; that it was a pity to have none of those grand bazars, that is to say, markets and public magazines, surrounded with columns, serving at the same time for use and ornament. He confessed that the places destined for the public diversions, were unworthy of a city of the fourth order; that they saw with indignation despicable houses upon the more beautiful bridges, and that they wished in vain for public places, fountains, statues and all the monuments which form the glory of a nation.

Give me leave, said the Indian philosopher, to ask you a small question. Why do you not provide yourselves with every thing you want? Oh! replied the Bostangi, there are no means of performing it: the cost would be too great. The cost would be nothing answered the philosopher. We have already had this fine paradox displayed to us, returned the citizen, but it is the discourse of a sage, that is to say, things admirable in theory and ridiculous. In practice we are continually dunned with these fine sentences. But what did you answer, demanded the philosopher, to those who have represented

sented to you that no more was necessary than to be willing, and that it would cost nothing to the state of Cachemire to adorn your capital, to make all the great things which may be necessary? We answered nothing, replied the Bostangi, but laughed according to our custom, without taking the trouble to examine. Is it so replied the philosopher? Laugh less and examine more, and I will proceed to demonstrate this paradox, which would render you happy, but which alarms you. The Cachemirian, who was a very polite man, bit his lips for fear of laughing in the face of the Indian, and they had the following conversation together.

Philosopher. What do you call being rich?

Bostangi. To have much money.

Phil. You deceive yourself; the inhabitants of South America formerly possessed more gold than you will ever have; but being without industry, they had nothing of that which money can procure: they were really in misery.

Bost. I understand: you make riches to consist in the possession of a fertile land.

Phil. No: for the Tartars of Ukrain inhabit one of the finest countries in the universe, and are in want of every thing. The opulence of a state is like all the talents which depend on nature and art. Therefore riches consist in the soil and the industry. The richest and most happy people are they who most cultivate the best land, and the best present that God has given to man, is the necessity of working.

Bos. Agreed; but to do the work in question, ten thousand men for ten years will be required; and whence are they to be paid.

Phil. Have not you kept one hundred thousand soldiers in pay during ten years of war?

Bos. It is true, and the state did not appear to be impoverished on that account.

Phil. What! have you money enough to send an hundred thousand men to be killed, and are unable to give the means of living to ten thousand?

Bos.

Bos. The case is very different : it cost much less to send a citizen to death than to make a sculptor of him.

Phil. You deceive yourself again. Thirty thousand cavalry alone are much more expensive than ten thousand artizans : and the truth is, that neither the one nor the other are dear when they are employed in their own country. What do you think it cost the ancient Egyptians to build the Pyramids, and the Chinese to make their grand wall ? Onions and rice. Were their lands exhausted for having nourished laborious men, instead of fattening the indolent and lazy ?

Bos. You push me hard, but I am not convinced. Philosophy reasons, but custom acts.

Phil. If men had always pursued this maxim, they had continued to eat acorns to this hour, and had never known what the full moon is. For the execution of the greatest enterprises, no more is necessary than a head and hands, and the conclusion is at length accomplished. You are possessed of stone, iron, copper, and wood ; you want therefore only the will.

Bos. We have every thing. Nature has been very indulgent to us. But what enormous expences are required to bring so many materials into use ?

Phil. I do not understand your discourse. What expences is it you speak of ? Your land produces sufficient to nourish and clothe all your inhabitants. You have all the materials in your hands ; you have two hundred thousand idle people whom you might employ : nothing more then remains but to set them to work, and to give them for wages that which will support and clothe them well. I do not see that this will be any expence to your kingdom of Cachemire ; for assuredly you pay nothing to the Persians and Chinese for setting your citizens to work.

Bos. What you say is very true, neither money nor provisions are sent out of the kingdom on that account.

Phil. Why then do you not immediately begin your works ?

Bos. It is too difficult to set so large a machine in motion,

Phil.

Phil. How have you done to support a war which has cost so much blood and treasure?

Bos. We have made the possessions of land and money contribute in proportion to their property.

Phil. Well then, if contributions are made to promote the misfortunes of mankind, can nothing be raised to advance its happiness and glory? What! have you not then, since your being a people, yet discovered the secret of making the rich set the poor to work? You have not then hitherto acquired the first elements of politics?

Bos. Supposing we had obliged the possessors of rice, of linen, and of cattle, to give pilau and shirts to the poor employed in removing the earth and carrying burthens, we should not be more advanced. It would be necessary to make the artists work who are all the year employed in other business.

Phil. I have been informed that you have about six score days in the year on which no work is done at Cachimire. Why do not you change half these days of indolence into days of utility? Why do you not employ the artists on the public edifices on those days, which they would otherwise consume in indolence? Those who know nothing, they who are in possession only of limbs would then become possessed of industry: you would form a people of artizans.

Bos. These days are appropriated to the tavern and debauchery, from whence much gain results to the public treasury.

Phil. Your reasoning is admirable; but money does not return to the public treasury but by circulation. Does not work promote circulation more than debauchery which produces diseases? Is it really for the advantage of the state that the people should be drunk one third of the year?

This conversation lasted a long time. The Bostangi confessed at last that the philosopher was in the right, and he was the first Bostangi that had been convinced by a philosopher. He promised to do much; but men never do all they wish nor all they can.

While

While the reasoner and the Bostangi were thus discouraging on the heights of science, a score of fine biped animals passed by, having a little cloke above a long jacket, a pointed capuchin on their heads, and a cincture of cord about their reins. See, there are a set of stout well made fellows, said the Indian, how many have you in your county? Almost an hundred thousand of different species, replied the Bostangi. What proper men to work for the embellishment of Cachemire, exclaimed the sage! with what pleasure I should see the spade, the trowel, and the square in their hands! And so should I, answered the Bostangi; but these are too great saints to work. What do they then, demanded the Indian? They sing, they drink, they digest, said the Bostangi. How beneficial that must be to a state! returned the Indian. The conversation lasted long, but produced very little.

Dialogue between an ADVOCATE and his CLIENT.

Client.

WELL, Sir, how goes on the suit of the poor orphans?

Adv. How! It is only eighteen years since their property has been held in execution (*aux saisies-réelles.*) The charges of justice have yet consumed no more than the third of their fortune, and yet you have the conscience to complain.

Client. I do not complain of that trifle. I know the custom, and respect it; but how has it happened that in the three months you have demanded audience, you have not yet been able to obtain it?

Adv. Because you have not yourself demanded it for your wards. It is necessary that you should go many times to the judge to intreat him to hear you.

Client. His duty is to render justice without being intreated. He is very great in having the fortunes of men to decide at his tribunal; but he is little and mean to wish to have the unfortunate soliciting in his anti-chamber.

chamber. I do not go to the audience of my *cure* to intreat him to chant the high mass; why am I obliged to intreat my judge to discharge the functions of his employment? At length then, after so many delays, we shall be judged to day.

Adv. Yes: and it is very probable that you will carry a principal point of your suit; for there is a decisive article in Charondas which makes in your favour.

Client. This Charondas was probably a chancellor of one of our first kings, who made a law in favour of orphans.

Adv. Not at all; 'tis a private person who has given his opinion in a large volume which nobody reads: but an advocate cites it; the judge believes him, and the cause is gained.

Client. What? Does the opinion of Charondas supply the place of law?

Adv. The worst of the affair is, that Turnet and Brodeau are against you.

Client. Other legislators of the same stamp, no doubt.

Adv. Yes, the Roman law not being sufficiently clear in the present case, there are various opinions about it.

Client. Why do you mention the Roman law? Do we live under Justinian and Theodore?

Adv. No: but our ancestors were taken up with the chase and tournaments; they ran to the holy land with their mistresses. You may conceive that these important occupations did not leave them time to establish an universal jurisprudence.

Client. Oh, I understand you. You have no laws, and therefore have recourse to Justinian and Charondas for information, when an inheritance is to be divided.

Adv. You are deceived; we have more laws than all Europe together; almost every town has its peculiar laws.

Client. Oh! this is an additional wonder.

Adv. Would to God your wards had been born at Guignes-la-Putain instead of Melun, near Corbeil?

Client. What good effect would that produce?

Adv.

Adv. You would gain your cause with a high hand; for Guignes-la-Putain is situate within an usage that is quite in your favor, but at two leagues distance the case is quite otherwise.

Client. But are not Guignes and Melun both in France? and is it not absurd and shocking, that what is true in one village should be false in another? By what strange barbarism does it happen that countrymen do not all live under the same laws?

Adv. It is because the inhabitants of Guignes and Melun were not formerly countrymen. These two towns were once two separate empires, and the august sovereign of Guignes, though vassal to the king of France, gave laws to his subjects; these laws depended on the will of his *maître d'hôtel*, who could not read, and their respectable tradition has passed from father to son among the inhabitants, so that the race of the Barons of Guignes being, for the misfortune of the public, extinct, the manner of thinking of their valets still subsists, and takes the place of fundamental laws. It is thus from post to post throughout the kingdom; you change the jurisprudence every time you change your horses. Judge then what must be the situation of a poor advocate, when he is employed to plead, for example, for a Poitevin against an Auvergnac.

Client. But do not the Poitevins, the Auvergnacs and the Guignes clothe themselves after the same fashion? Is it more difficult to have the same laws than the same fashions? and since the Taylors and Shoemakers agree from one end of the kingdom to the other, why should not the judges do the same?

Adv. What you ask is as impossible as to have but one weight and one measure. How can you expect the law to be every where the same, when the pint is not so? For my part, after having profoundly meditated on the subject, I have found, that as the measure of Paris is not the measure of St. Dennis, it is necessary that heads should not be constructed in the same manner at both places. Nature is infinitely various and we ought
not

not to attempt to make that uniform which she has rendered so different.

Client. But it appears that in England there is but one law and one measure.

Adv. Do not you perceive that the English are barbarians? They have the same measure, but in recompense they have twenty different religions.

Client. You astonish me: what do people live under the same laws and not under the same religion?

Adv. They do: and that evidently shews that they are abandoned to their reprobate understandings.

Client. Does not that originate from their belief that laws are made for the exterior of man, and religion for the interior? Perhaps the English and other people have thought that the observation of the laws was between man and man, and that religion was between man and God. I perceive I have no reason to complain of an Anabaptist, who is not baptized till thirty years of age; but I should be much aggrieved if he were to refuse payment of a bill of exchange. They who offend only against God, ought to be punished in the other world; they who offend against men ought to be chastised in this.

Adv. I understand nothing of this. Adieu, I am going to plead your cause.

Client. God grant you may understand that better.

Dialogue between MADAME DE MAINTENON, and MADEMOISELLE DE L'ENCLOS*.

Maintenon.

YES, I have begged you to come and see me in private. You think, perhaps, that it is to dazzle your eyes with my grandeur: no, it is to find consolation and relief in your company.

* Madame de Maintenon and Mademoiselle de l'Enclos had lived long together. This celebrated lady, who died at the age of eighty-eight year, was acquainted with the author and left him a legacy.
The

Madlle. de l'Enclos. Consolations! Madam, I must confess, that having no news of you since your advancement, I believed you to be happy.

Maint. I have the reputation of being so. There are minds to whom that is sufficient. Mine is not of that temper: I have always regretted the loss of your conversation.

L'Enclos. I understand you: you perceive the want of friendship in grandeur; and I, who live for friendship, have never perceived the want of grandeur. But why did you forget me for so long a time?

Maint. You know it was necessary that I should seem to forget you; and believe me, that among the misfortunes attached to my elevation, I esteem that the greatest of all.

L'Enclos. For my part, I have neither forgotten my early pleasures nor my old friends. But if you are unhappy, you deceive the whole world that envies your happiness.

Maint. I deceived myself first. If when we formerly supped together with Villarfaux and Nantouillet, in your little *Rue de Tournelles*, when the mediocrity of our fortune was scarce a subject for reflection, if any one had then said to me: You shall one day approach the throne; the most powerful monarch on earth shall place an entire confidence in you only; all favors shall pass through your hands; you shall be regarded as a sovereign. If, I say, any one had made such predictions, I should have said, that their accomplishment would have made me die with astonishment and joy. All this is now accomplished; I have experienced the surprise of the first moments; I have hoped for joy and have not found it.

L'Enclos. Philosophers may believe you; but the public will be hardly able to conceive that you are

The author has often heard the late Abbé de Château-Neuf say, that Madame de Maintenon used her endeavours to persuade her to become religious (or profess) and help her to sustain the fatigue of grandeur and old age at Versailles. V.

not content; and if it thought that you were not, it would blame you.

Maint. It must, like me, be deceived. The world is a vast amphitheatre, in which every one is placed as chance has allotted. They believe that the supreme felicity is in the upper seats: but how erroneous is their belief!

L'Enclos. I know that this error is necessary to mankind. They would not take the trouble to raise themselves if they did not believe that felicity was placed far above them. We are both acquainted with less illusive pleasures. But pray how have you contrived to be so unhappy in your situation?

Maint. Ah, my dear Ninon, since the time I began to call you Mademoiselle de l'Enclos, I have begun to be less happy. It is necessary that I should assume a distance and reserve; to let you know the whole, my heart is vacant, my mind is constrained; I act the first character in France, but I only act it. I live a life of disguise. Ah! if you knew the burthen imposed on a languishing mind to animate another mind, to amuse a spirit that is no longer amusable*!

L'Enclos. I conceive all the disagreeableness of your situation. I am tender of insulting you by reflecting, that Ninon is more happy at Paris in her little house with the Abbé de Château-Neuf and a few friends, than you at Versailles with the most estimable of men who places all his court at your feet. I do not wish to expose to you the superiority of my situation. I know that it is improper to be too sensible of one's own felicity in the presence of the unfortunate. Endeavour, madam, to bear your greatness with patience; endeavour to forget that pleasing obscurity in which we lived, as you have been obliged to forget all your old friends. The only remedy in your unhappy state is never to say,

Ye happy hours than never will return!

In vain your absent fleeting bliss I mourn;

* These are the very words of Madame Maintenon. V.

Oh

Oh cease, fond mem'ry, to increase my woes,
Let me in calm oblivion find repose !

Drink of *Lethé* ; comfort yourself particularly by reflecting on the many queens who are in the same disgusting situation.

Maint. Ah ! Ninon, is it possible to comfort one's self alone ? I have a proposition to make but I dare not speak.

L'Enclos. To be free with you, you have reason to be timid, but however speak.

Maint. It is to change, at least in appearance, your philosophy for prudery, to make yourself a woman of consequence. I will place you at Versailles ; you shall be my friend more than ever, and assist me to support my state.

L'Enclos. I have always loved you, madam, but to speak sincerely, I love myself better. It is not proper that I should make myself an hypocrite, and unhappy because you are unfortunate.

Maint. Cruel Ninon ! You have a harder heart than even a courtier. You abandon me without pity !

L'Enclos. No, I sympathise entirely with you. You have touched my heart, and to prove that I have still the same desire for your friendship, I offer you every thing in my power ; leave Versailles, and come and live with me in the *Rue de Tournelles*.

Maint. You pierce my heart. I cannot be happy near the throne, neither can I be happy in a lower state. See the sad effect of the court.

L'Enclos. I have no remedy for an incurable disease. I will consult the philosophers, who visit me, concerning your disorder, but cannot promise you that they shall perform impossibilities.

Maint. What, to see one's self at the summit of grandeur, to be adored, and yet not happy.

L'Enclos. Attend ; it is probable that there is a misunderstanding in the affair. You think yourself unhappy merely by your grandeur. Does not your unhappiness arise likewise from the consideration that your

eyes are not so brilliant, your stomach so good, nor your desires so ardent as formerly? To lose youth, beauty, passion, is your real misfortune. This is the reason why so many women become devotees at fifty, and save themselves from one disgust by embracing another.

Maint. But you are older than me, and yet neither a devotee nor unhappy.

L'Enclos. Let us explain the matter. We must not imagine that perfect happiness can be enjoyed at our age. A lively mind and five perfect senses are necessary in order to relish that kind of felicity. But with friends, liberty, and philosophy, we may possess as much as is consistent with our age. The mind is not uneasy but when out of its sphere. Believe me, and come and live with my philosophers.

Maint. See, there are two ministers coming. This is very different from philosophy. Adieu then, my dear Ninon.

L'Enclos. Adieu, unhappy and august lady!

Dialogue between a PHILOSOPHER and a CONTROLLER GENERAL of the FINANCES.

Philosopher.

DO you know that a minister of the finances can do much more good and consequently become a much greater man than twenty marshals of France.

Minister. I know very well that philosophers would wish to soften that rigor which is imputed to my place; but I did not expect that they would make me vain.

Philosf. Vanity is not so great a vice as you imagine. If Louis XIV. has not possessed a share, his reign would not have been so illustrious. The great Colbert was vain; do you have the vanity to surpass him. You are born in a more favorable age; and therefore ought to elevate your ideas in proportion.

Min.

Min. I agree that they who cultivate a fertile land have the advantage of those who first broke it up.

Philos. Be persuaded, that there is nothing useful that you may not perform with ease. Colbert, on the one hand, found the administration of the finances entirely in disorder, occasioned by the civil wars and thirty years of rapine: on the other hand, he had to deal with a nation light, ignorant, bigotted, and covered with the rust of thirteen hundred years. There was not a man in the council that knew any thing of the advantages of a change. There was not one who had an idea of the proportion of specie or the advantages of commerce. At present, light has been communicated from one to another. The populace always remains in the profound ignorance, in which the necessity of gaining a subsistence, and, I may say, of the state, ought to keep them. But the middle order is enlightened. This order is considerable; it governs the great, who think sometimes; and the little, who do not think at all. The same has happened to the finances since the great Colbert, as has happened to music since the celebrated Lully. With difficulty Lully found men who could execute his symphonies, simple as they were. At present the number of artists capable of executing the most difficult music, is increased with the art itself. It is the same in philosophy and the administration. Colbert has done more than the Duke of Sully, and it becomes the ministers of the present age to do more than Colbert.

At these words the minister perceiving that the philosopher had certain papers in his hand, was desirous of seeing them: they contained a set of ideas that might furnish matter for much reflection. The minister took the paper and read.

The riches of a state consists in the number of its inhabitants and industry.

Commerce does not serve to render a state more powerful than its neighbours, but because, in a certain number of years, it has a war with its neighbours, as in a certain number of years there is always some public calamity. Then, in this calamity of war, the richest

nation necessarily prevails over the others, *cæteris paribus*, because it can purchase more allies and foreign troops. Without the calamity of war, the augmentation of the mass of gold and silver would be useless: for provided there was a sufficiency of gold and silver for the purposes of circulation, and the balance of trade were equal, it is clear that we should then want nothing.

If there are two thousand millions in a kingdom, provisions and work will cost double the sum they might be purchased at if there were only one thousand millions. I am as rich with fifty thousand livres *per ann.* when I buy the pound of meat at four sous, as with one hundred thousand, when I must give eight sous; and for other things in proportion. Gold and silver are not then the true riches of a kingdom, it is the abundance of provisions; it is the industry of its inhabitants. We have lately seen on the river of Plate a Spanish regiment, all whose officers had swords mounted with gold, but they had neither linen nor bread.

I suppose that, since Hugh Capet, the quantity of money has not increased in the kingdom, but that industry has brought the arts to an hundred times the perfection. I say then, we are an hundred times as rich as in the time of Hugh Capet; for to be rich is to enjoy. Now I enjoy a house more airy, better built, and better distributed than that even of Hugh Capet himself; vines have been better cultivated, and I drink better wine; manufactures have been brought to perfection, and I am better clothed: the arts of pleasing the taste by more delicate seasoning, enables me to make better cheer every day than could be met with on the royal festivals of Hugh Capet. If he was carried from one house to another in a cart when he was sick, I am carried in a more commodious and agreeable chariot, in which I receive the pleasure of travelling without being incommoded by the wind. Not money but industry was wanting in order to suspend a box of painted wood on leathers for this purpose, and so of the rest. The stones with which the house of Hugh Capet was built were brought from the same quarry from whence the houses of Paris are built
at

at this day. More money is not required to build an inconvenient prison than an agreeable house. It costs no more to plant a garden well laid out, than to cut yews in a ridiculous manner, and make clumsy representations of animals. Oaks formerly rotted in the forests, they are now made into beams. Sand lay useless on the ground, which is now made into mirrors.

Now he is certainly rich who enjoys all these advantages. Industry alone has procured them. It is not then money that enriches a kingdom, it is knowledge. I mean that knowledge which directs the workman.

Commerce produces the same effect as labor, it contributes to make my life easy. If I am in want of the productions of the Indies, of a production of nature, which is only found at Ceylon or Ternate, I am poor with regard to these wants; and I am rich when commerce satisfies them. It was not gold and silver that I wanted, but coffee and cinnamon. But they who go six thousand leagues in order that I may have coffee for breakfast, are only the superfluity of the labouring part of the nation. Riches therefore consist in the great number of labourers.

The duty and aim of a good government is to produce population and labour.

In our climates more males than females are born. Therefore is it not advantageous to cause the females to die. Now it is clear, that it is killing them with respect to society to bury them alive in cloisters, where they are lost for the present generation, and destroy the future race. The money thrown away in the endowment of convents would then be well employed in the encouragement of marriage. I compare the uncultivated lands in France to the girls that are suffered to wither in a convent. Both ought to be cultivated. There are many methods of inducing cultivators to make their lands valuable which were before abandoned; but it is a sure means of prejudicing a state to seclude the girls and leave the fields covered with briars. Sterility in
every

every respect is either a vice of nature, or a sin against nature.

The king, who is the director and manager of the nation, gives pensions to the ladies of his court, and in so doing acts very properly; for the money goes to merchants, miliners, and embroiderers. But why are there no pensions attached to the improvement of agriculture? This money would return again to the state, but with much more profit.

It is an acknowledged imperfection in government to have beggars. Of these there are two sorts; those who go clothed in rags, from one end of the kingdom to the other, to extort from passengers, by their lamentable cries, money to go to the ale-house; and those who cloathed in uniform habits, go forth to put the people under contribution in the name of God, and return home to supper in large houses where they live at their ease. The first of these two species is less pernicious than the other; because they produce children to the state, and tho' they produce thieves, yet they also produce masons and soldiers. But both are so bad that all the world complains of them, tho' no one attempts to root them out. It is very strange that in a country, which has uncultivated lands and colonies, inhabitants should be suffered who neither promote industry nor population. The best government is that which has the fewest useless people. Whence comes it that people who have less gold and silver than us, have immortalized their memory by works which we dare not imitate? It is evident that their administration was better than ours, because it incited more men to work.

Taxes are necessary. The best method of raising them is that which most facilitates labor and commerce. An arbitrary tax is a vice in government. Charity alone can be arbitrary; but in a well governed state charity is unnecessary. The great Shah-abbas who made so many useful establishments in Persia, founded no hospitals. On being asked the reason, he replied, I desire that there may be no need of hospitals in Persia.

What

What is a tax? it is a certain quantity of corn, of cattle, of provisions, which the possessors of land owe to those who have no land. Money is only the representation of these necessities. The tax is really upon riches; you cannot demand of the poor a part of the bread he earns, and the milk which the breast of his wife gives to his children. It is not on the poor, or on the manufacturer that a tax is to be laid. He must, as an inducement to work, be made to hope that he himself shall one day be happy enough to pay taxes.

During the time of war, I will suppose the taxes to surpass fifty millions *per annum*. Of these fifty, twenty pass into foreign countries: and thirty are employed in causing men to slay each other. I will suppose that, in time of peace, of these fifty millions, five and twenty only are paid; nothing then passes into foreign countries; as many citizens are made to work for the good of the public as before were slain. Works of every kind are augmented, lands are cultivated; towns are embellished: then the public is really rich by contributing to the state. The taxes during the calamity of war, ought not to serve to procure us the conveniences of life, but to defend them. The most happy people ought to pay the most, which people undoubtedly are the most industrious and rich.

Public circulating paper is to money, what money is to provisions, a representation or pledge of exchange. Money is only useful because it is easier to pay for a sheep by a *louis d'or*, than to give four pair of stockings in return for the same. It is likewise easier for the receiver of a province to send four hundred thousand francs in a letter to the royal treasury, than to have them conveyed with a great expence: therefore a bank or paper credit is useful. Paper credit in the government of a state, is in commerce and circulation what a capstan is in a quarry. They lift weights that would be immovable by the hand. A Scotchman, a useful, tho' dangerous man, established paper credit in France; it was a medicine too emetic for the sick. It produced

produced convulsions; but ought we to renounce a good remedy because we have imprudently taken too large a dose? There remains out of the wreck of his system, an East India Company that is the envy of foreigners and might be the glory of the nation; therefore this system within proper bounds would have produced more good than it has evil.

To change the value of specie is to make false money. To circulate more paper than the mass of specie and effects amount to, is also to make false money.

To prohibit the exportation of bullion is a remnant of barbarism and indigence: it is at once to determine not to pay your debts and to destroy commerce; it is in effect to refuse payment, because if the nation is indebted, it is proper it should discharge its debt with the foreigner: it is to destroy commerce because gold and silver are not only the price of merchandize but merchandize itself. Spain, like other nations, has preserved this ancient law which is only an ancient grievance. The only resource to government is that this law is constantly violated.

To lay taxes on one province for the advantage of another, to make Champagne the enemy of Burgundy, and Guyenne the enemy of Bretagne, is still a shameful and ridiculous abuse. It is as if I should place some of my domestics in an antichamber to snatch away and eat part of my supper when it is brought up. Endeavours have been used to correct this abuse, but, to the disgrace of the human understanding, they did not succeed.

There were many other ideas in the papers of the philosopher; the minister approved of them and procured a copy; and it is the first writing of a philosopher that has been seen in the port folio of a minister.

Dialogue between MARCUS AURELIUS and a
RECOLLET.

Marcus Aurelius.

I Believe I know where I am at last. This is certainly the capitol, and that large building the temple. That man I behold is certainly one of the priests of Jupiter. Friend, a word with you if you please.

Recol. Friend! the expression is something familiar. You must be a great stranger to accost in this manner brother Fulgence the recollet, inhabitant of the capitol, confessor to the duchess of Popoli, and who sometimes speaks to the Pope as if he were speaking to a man.

M. Aur. Brother Fulgence in the capitol! Things are rather changed. I do not comprehend you. Is not this the temple of Jupiter?

Recol. Go, my good friend, you rave. Who are you, if you please, with your antique habit and your little beard? Whence come you and what is your business?

M. Aur. My habit is as usual; I return to see Rome: I am Marcus Aurelius.

Recol. Marcus Aurelius! I have heard of some such name. There was a Pagan emperor, I think, of that name.

M. Aur. It is myself. I wished to see again this Rome, which loved me and which I loved; this capitol where I have triumphed by disdaining triumphs; this land which I rendered happy. But I no longer recollect Rome. I have seen the column that was erected to me, but have not been able to discover the statue of the wise Antoninus my father. It is another countenance.

Recol. I believe it, Mr. Damned. Sextus Quintus re-erected your column, but instead of your father's he placed the statue of a man that was both worth your father and yourself.

M. Aur. I have always thought it easy to have more merit than myself; but thought it difficult to have
more

more than my father. My piety might deceive me, every one is liable to error. But why do you call me damned?

Recol. Because you are so. Was it not you who, if I remember, so much persecuted people to whom you were under obligation, and who had procured rain to enable you to beat your enemies.

M. Aur. Alas! I was far from persecuting any one. I gave thanks to heaven that by a happy conjuncture a storm of rain came at the time my troops were dying with thirst; but I never heard that I was obliged to the people you speak of for that storm, tho' they were very good soldiers. I swear to you that I am not damned. I did too much good to mankind for the Divine Effence to do me hurt. But tell me, I pray, where is the palace of the emperor my successor? is it still on mount Palatinus? For I really do not know my own country again.

Recol. I can easily believe it; we have brought every thing to perfection. If you please I will lead you to mount Cavallo. You shall kiss the foot of the holy father; and you shall have indulgences, for you seem to have great need of them.

M. Aur. In the mean time let me have your indulgence; and tell me freely is there no longer either emperor or Roman empire.

Recol. Yes, yes, there is an emperor and an empire; but all that is four hundred leagues hence, in a little town called Vienna on the Danube. I advise you to go there to seek your successors; for here you are in danger of seeing the inquisition; I must inform you that the reverend fathers Dominicians do not understand raillery, and that they would very ill treat the Marcus Aurelius, the Antonins, the Trajans, and the Titus', people who knew nothing of their catechism.

M. Aur. A Catechism! The Inquisition! Dominicans! Recollets! Cardinals! a Pope! and the Roman empire in a little town on the Danube. I did not expect it, but I conceive that the face of things ought to be changed in seventeen hundred years. I should be curious to

see

see a Roman emperor Marcoman, Quadus, Cimbrus or Teutoneus.

Recol. You may have that pleasure or even greater, when you please. You will then be much surprised when I acquaint you that the Scythians are in possession of half your empire, and that we have the other half; that a priest like myself is the sovereign of Rome; that brother Fulgence may be so in his turn; that I shall give benedictions in the same place in which you bound vanquished kings to your chariot; and that your successor on the Danube has not a town of his own, but that there is a priest who lends his on occasion.

M. Aur. You tell me strange things. All these great changes could not be made without great misfortunes. I love mankind and deplore its unhappiness.

Recol. You are too good. It must be confessed that it has cost torrents of blood, and an hundred provinces have been ravaged; but this was absolutely necessary in order that brother Fulgence should sleep in the capitol at his ease.

M. Aur. Rome, the capital of the world, then is much decayed and unfortunate.

Recol. Decayed if you please, but not unfortunate. On the contrary, peace reigns, and the fine arts flourish. The ancient masters of the world, are now only masters of music. Instead of sending colonies to England we only send eunuchs and fiddlers. We have no longer our Scipios that destroy Carthages, but we have likewise no more proscriptions. We have changed glory for repose.

M. Aur. I endeavoured, during my lifetime, to become a philosopher, and have really become so since. I find that repose is quite as valuable as glory; but, from what you have been saying, I am inclined to suspect that brother Fulgence is not a philosopher.

Recol. How! not a philosopher? I am one of the fiercest. I have taught philosophy, and what is more, theology!

M. Aur. And pray what is theology, if you will be so obliging as to explain it.

Recol.

Recol. It is—it is that which has caused me to be here, and has deposed the emperors. You seem chagrined at my glory, and the little revolution that has happened in your empire.

M. Aur. I adopt the eternal decrees; I do not know what it is to murmur against destiny; I admire the vicissitude of human things; but since every thing must change, since the Roman empire is fallen, the recollets only have their turn.

Recol. I excommunicate you; and proceed to matins.

M. Aur. And I go to rejoin the Being of Beings.

Dialogue between a BRACHMAN and a JESUIT, concerning the Necessity and Connexion of Things.

Jesuit.

IT is apparently by the prayers of St. Francis Xavier that you have arrived at so happy and so great an age. An hundred and twenty-four years! 'tis an age worthy of the time of the patriarchs!

Brach. My master, Fonfouka, lived three hundred years; it is the ordinary course of our life. I have a great esteem for Francis Xavier; but his prayers could never derange the order of the universe, and if he had only the gift of making a fly live a single instant longer than the chain of destiny allowed, this globe would be quite another thing than you see it at present.

Jes. You have a strange notion of future contingencies. You do not then know that man is free, that our will disposes at pleasure every thing that passes on the earth. I can assure you that the Jesuits alone have for their part made considerable alterations.

Brach. I have no doubt of the knowledge and power of the reverend fathers the Jesuits; they are a very considerable party in the world; but I do not think them the sovereigns. Every man, every being, as well Jesuit as Brachman, is a part of the mechanism of the universe; he

he obeys and not commands destiny. From whence did it arise than Gengis-kan conquered Asia? From the hour at which his father awaked when in bed with his wife, from a word which a Tartar pronounced some years after. I, for example, who stand before you, am one of the principal causes of the deplorable death of your good King Henry IV. and I am still grieved at the reflection.

Jes. Your reverence is apparently in jest. You the cause of the assassination of Henry IV.?

Brach. Alas! yes. It was in the nine hundred and ninety three thousandth year of the revolution of Saturn, which answers to the five hundred and fiftieth year of your æra. I was young and heedless. I began a short walk on the coast of Malabar with the left instead of the right foot, and from thence evidently followed the death of Henry IV.

Jes. How so, I beseech you? For we who are charged with being very much concerned in that affair, had no part in it.

Brach. Thus it was that fate arranged the affair. By advancing the left foot, as I had the honor to observe to you, I unfortunately caused my friend Eriban, a Persian marchant, to fall into the water, where he was drowned. He had a very beautiful wife who married again with an Armenian merchant; she had a daughter who married a Greek; the daughter of this Greek settled in France and married the father of Ravailac. If all that had not happened, you may perceive, that the affairs of the houses of France and Autriche would have fallen out quite differently. The system of Europe would have been changed. The wars between Germany and Turkey would have had other consequences; these consequences would have influenced Persia, and Persia the Indies. You see how every thing was connected with my left foot, which was thus united to all the other events in the universe, past, present and future.

Jes. I will propose this argument to some of our father theologians and send you the solution.

Brach.

Brach. In the mean time I can farther inform you that the maid servant of the grandfather of the founder of the order of Feuillans, for I have read your histories, was likewise one of the necessary causes of the death of Henry IV. and all the consequences which ensued.

Jes. She must then have been a mistress of policy and intrigue.

Brach. Not at all. She was an idiot, who was got with child by her master. Madame de la Barriere died of grief. She who succeeded her was, as your chronicles say, the grandmother of the fortunate Jean de la Barriere, who founded the order of the Feuillans. Ravailiac was a monk of this order. He propagated among them a certain doctrine, then very much in fashion, as you know. This doctrine persuaded him that it was a good work to kill the best of kings. The consequence need not be told.

Jes. In spite of your left foot, and the servant of the grandfather of the founder of the Feuillans, I shall always believe that the horrible act of Ravailiac was a future contingency which might very well not have come to pass; for in short, the will of man is free.

Brach. I do not know what you understand by a free will. I affix no idea to these words. To be free is to do what one wills, and not to will what one pleases. All that I know is, that Ravailiac committed voluntarily the crime which he was destined to perpetrate by immutable laws. This crime was a link in the great chain of destiny.

Jes. You may talk as you please; things are not so connected together as you imagine. What concern for example with the rest of the machine has the useless conversation we now hold together on the banks of the river of India.

Brach. Our conversation is of small importance, it must be confessed; but if you were not here the whole machine of the world would be otherwise than it is.

Jes. Your Braminical reverence advances a most outrageous paradox.

Brach. Your Ignatian paternity may believe what it pleases. But certainly we should not have had this conversation if you had not come to the Indies. You would not have made this voyage if your St. Ignatius de Loyola had not been wounded at the siege of Pamplune, and if a Portuguese king had not been bent upon doubling the Cape of Good Hope. Has not this king changed the face of the world by the help of the mariner's compass. But it was previously necessary that a Neapolitan should invent the compass; and after this, affirm if you can, that every thing is not eternally preserved in a constant order, which unites by invisible and indissoluble bonds, every thing which is born, which acts, which suffers, or which dies on our globe.

Jes. But what then becomes of future contingencies?

Brach. Let what will become of them, the order established by an eternal and all-powerful hand ought to subsist for ever.

Jes. According to you, we ought not then to pray to God?

Brach. We ought to adore him. But what do you mean by the expression, praying to him?

Jes. That which all the world understands by it, that he will favor our desires, that he will supply our wants.

Brach. I understand you. You will have a gardiner obtain sunshine on the day which God from all eternity had destined for rain; and that a pilot should have an east wind when a west wind is necessary for the refreshment of the land and sea? To pray, father, is to submit. Good evening. Destiny calls me at present to my Bramine.

Jes. My free will presses me to go and give a lesson to a young scholar.

LUCRETIVS and POSSIDONIUS.

D I A L O G U E I.

Possidonius.

YOUR poetry is sometimes admirable; but the physiology of Epicurus appears to me of little value.

Luc. What, you are not willing to grant that atoms arranged themselves of themselves, so as to form this universe?

Poss. We mathematicians cannot grant any propositions except those which are evidently proved upon incontestable principles.

Luc. My principles are,

Ex nihilo nihil, in nihilum nil posse reverti,
Tangere enim & tangi nisi corpus nulla potest res.

Nothing produces nothing, neither can being be annihilated, for nothing can touch or be touched but body.

Poss. Supposing I had granted you these principles, and even atoms, and a vacuum, you would no more be able to persuade me that the universe is arranged of itself in the admirable order we see, than if you were to say to the Romans, that the sphere of Possidonius made itself.

Luc. But who then has made the world?

Poss. An intelligent Being, more superior to the world and me, than I am to the copper of which I made my sphere.

Luc. You who admit only evident things, how can you reconcile yourself to a principle of which you have not otherwise the least notion?

Poss. In the same manner as before I was acquainted with you; I judged that your book was the work of a man of wit.

Luc. You allow that matter is eternal, that it exists because it exists; now if it exists by its own nature, why may it not by its own nature form suns, worlds, plants, animals and men?

Poss.

Poss. All the philosophers who have preceded us, have believed matter to be eternal, but they never demonstrated it; and even if it be granted to be eternal, it does not at all follow that it can produce or form works in which such sublime designs shine forth. This stone may be eternal, but you cannot persuade me that it can produce the Iliad of Homer.

Luc. No: a stone will not produce the Iliad any more than it will produce a horse, but matter organized by time, and become a mixture of bone, flesh and blood, will produce a horse; and organized more finely will compose an Iliad.

Poss. You suppose it without any proof; and I can admit nothing without proof. I will give you bones, blood and flesh, already made, and will leave you and all the Epicureans in the world to work on it. Would you agree to the bargain of possessing the Roman empire, if you contrive to make a horse with these materials ready prepared, and to be hanged if you do not succeed?

Luc. No: that exceeds my power, but not the power of nature. Millions of ages are necessary, in order that nature having passed through all possible forms, may arrive at length at the only one that can produce living beings.

Poss. You may shake all the materials in the earth mixed together in a cask for your whole life, and you will not even produce a regular figure; you will produce nothing. If the term of your life is insufficient to produce a mushroom, will the term of another life be sufficient? Will that which is not produced in an age, be produced in a greater number? We ought to have seen men and animals produced from the bosom of the earth, and corn without seed, &c. &c. before we presume that matter has given itself those forms. No person that I know has ever seen this operation, therefore it ought not to be believed.

Luc. Well then, men, animals and trees have always existed. All philosophers agree that matter is eternal, let them agree that generations are likewise eternal. It

is the nature of matter that there should be stars that turn, birds that fly, horses that run, and men who write Iliads.

Poss. In this new supposition you change your opinion; but you always suppose the thing in question, you admit a thing of which you have not the slightest proof.

Luc. It must be allowed me to believe that what exists now, was in being yesterday, or an age ago, or an hundred ages, and so on, going back to infinity. I avail myself of your argument; no one ever saw the sun and stars begin their course, or the first animals formed and endued with life. We ought therefore to believe that every thing has eternally existed as it is.

Poss. There is a great difference; I see an admirable design, and I ought to believe that an intelligent being has formed that design.

Luc. You ought not to admit a being of whom you have no knowledge.

Poss. This is as if you were to say that I ought not to believe that an architect has built the capitol, because I cannot see the architect.

Luc. Your comparison is not just. You have seen houses built, and you have seen architects; so that you ought to conclude that it is a man like the architects of the present day who built the capitol. But in this case things are not similar, the capitol exists not by its nature, and matter exists by its nature. It is impossible but it should have a certain form. Now, why will you deny it the form it now possesses? Is it not much more easy to acknowledge nature which modifies itself, than an invisible being that modifies it? In the first case you find but one difficulty, which is to comprehend how nature acts. In the second you have two, which are to comprehend this same nature, and an unknown being who acts upon it.

Poss. It is quite the contrary. I see not only difficulty but impossibility in comprehending that matter can have designs varied to infinity, and I see no difficulty in admitting an intelligent Being, who governs this matter by his infinite designs and his almighty will.

Luc.

Luc. What? It is because your mind cannot comprehend a thing that it supposes another? It is then, because you cannot discover the necessary artifice and mechanism by which nature has arranged itself into planets, suns and animals, that you have recourse to another being?

Poss. No: I have not recourse to a God, because I cannot comprehend nature: but I conceive evidently, that nature has need of a supreme intelligence, and this sole reason would convince one of the existence of a God, if I had no other proofs.

Luc. And what if this matter itself possessed intelligence?

Poss. It is evident to me that it does not.

Luc. And to me it is evident that it does, since I see bodies like you and I who reason.

Poss. If matter itself were possessed of thought, it must possess it necessarily. Now, if this property were necessary to it, it would possess it in all time, and in all place. For that which is necessary to a thing can never be separated from it. A bit of mud, the vilest excrement would think. Now, certainly, you will not affirm that dung thinks. Thought is not then an attribute of matter.

Luc. Your reasoning is a sophism; I hold motion to be necessary to matter. Yet this dung, this cake of mud is not actually in motion; they will be so when any body impels them. In like manner, thought will not be an attribute of matter, except when the body is organized for that purpose.

Poss. Your error arises from your always supposing the thing in question. You do not observe that in order to organize a body, to make it man, to produce thought in it, a previous thought, consciousness and settled design must be supposed. Now, you cannot admit of design previous to the formation of the only beings who, here below, have designs; you cannot admit of thought before the beings which have thought existed. You again suppose the thing in question, when you say that motion is necessary to matter. That which is absolutely

necessary exists always in all matter. Now motion exists not always. The Pyramids of Egypt are certainly not in motion. A subtile matter may pass between or thro' the stones of the Pyramids, but the mass is immoveable. Motion is not therefore necessary to matter; it comes to it from without in the same manner as thought comes to men from without. There is therefore an intelligent and powerful being who gives motion, life and thought.

Luc. I may answer you by saying, that there has always been motion and intelligence in the world. This motion and intelligence have been distributed from all time according to the laws of nature. Matter being eternal, it was impossible but that its existence should be in some order: it could not be in any order without motion and thought; it is necessary therefore that motion and intelligence should be in it.

Poss. Whatever you advance, you can only make suppositions. You suppose an order; it is necessary therefore that an intelligence should exist that hath arranged this order. You suppose motion and thought to exist before matter was in motion, and before there were either men or thoughts. You cannot deny but that thought is not essential to matter, since you dare not affirm that a flint thinks. You can only oppose *perhaps* to the truth which presses you; you perceive the inactivity of matter, and are forced to admit a supreme, intelligent, and all-powerful Being, who has organized matter and thinking beings. The designs of this superior intelligence shine forth in all their parts, and you ought to perceive them in a stalk of grass, as in the course of the stars. We see that every thing is directed to a certain end.

Luc. Do not you take that for a design which is a necessary existence? Do not you take that for an end or purpose which is no more than an use, to which we apply things that exist? The Argonauts built a ship to go to Colchos: will you say that trees were created for the purpose that the Argonauts might build a ship, and that the sea was created that they might undertake their voyage? Men wear buskins: will you say the Supreme Being has created legs for the purpose of wearing them?
Doubtless

Doubtless no: but the Argonauts having seen wood, built a ship, and knowing that the water could carry this ship, they undertook their voyage. In the same manner, after an infinity of forms and combinations had taken place, it happened that the humours and the *cornea transparens* which compose the eye, formerly separated in different parts of the human body, became reunited in the head, and animals began to see. The organs of generation which were once dispersed, were collected together and assumed the form they now have. Since which time, generations have been regularly produced. The matter of the sun spread abroad, and dispersed thro' space conglobated itself together and formed the star that now enlightens us. Is there any impossibility in all this?

Poff. Certainly you do not mean to have recourse to such a system as this. In the first place, in adopting it you abandon the eternal generations of which you have just spoken. Secondly, you deceive yourself respecting final causes. There are voluntary uses to which we apply the gifts of nature, but there are also indispensable effects. The Argonauts might not have employed the trees of the forest to construct a vessel, but these trees were evidently destined to grow on the earth, and to produce fruits and leaves. We may forbear to cover the leg with a buskin; but the leg is evidently made to carry the body and to walk, the eye to see, the ear to hear, and the generative parts to perpetuate the species. If we reflect that a star placed at four or five hundred millions of leagues from us, emits rays or light which make the same determined angle in the eyes of every animal, and that all these animals have the sensation of light, at the same instant you must confess that it indicates an admirable mechanism and design. Now is it not unreasonable to admit of mechanism without an artist, a design without an intelligence, and designs like these without a Supreme Being?

Luc. If I admit this Supreme Being, what is his form? Exists he in place? Is he out of place? Does he exist in time or out of time? Does he fill the im-

ment of space or not? For what purpose has he created this world? What is his final purpose? Why has he created beings intelligent and unhappy? Why do moral and physical evil exist? Which way soever I turn my attention all is incomprehensible.

Poss. It is precisely because this Supreme Being exists that his nature ought to be incomprehensible: for if he exists there ought to be an infinity between him and us. We ought to admit his existence without knowing what he is and how he acts. Are you not obliged to admit asymptotes in geometry without conceiving how these lines can continually approach and never touch each other? Are there not propositions relating to the circle which are as incomprehensible as they are demonstrably certain? Conceive then, that we ought to admit the incomprehensible when the existence of that incomprehensible is proved.

Luc. What then must the dogmas of Epicurus be renounced?

Poss. It is better to renounce Epicurus than reason.

D I A L O G U E II.

Lucretius.

I Begin to acknowledge a Supreme Being, inaccessible to our senses and demonstrated by our reason, who has made and preserves the world; but with regard to what I have said in my third book concerning the soul, which is admired by all the philosophers of Rome, I am inclined to believe that you will not be able to make me renounce it.

Poss. At the commencement you say,

Idque situm media regione in pectoris haeret.

The soul is placed in the middle of the breast.

But when you composed your elegant verses did not you use an effort of the head? When you speak of the understanding of Cicero, or the orator Mark Antony, do
not

not you say that he had a good (or an enlightened) head? and if you were to say he has a good breast, would it not be supposed that you spoke of his voice and lungs?

Luc. But do not you perceive that it is about the heart that sentiments of joy, of grief, and of fear are formed?

Hic exultat enim pavor ac metus, hæc loca circum
Lætitiæ mulcent.—

Do not you perceive your heart dilate or contract with good or bad news? Are there not secret springs there which unbend themselves, or which become more elastic? The seat of the soul is consequently there.

Poss. There is a pair of nerves that originate in the brain, and which pass to the heart and stomach, which descend to the parts of generation and impress their motions; will you therefore say that the human understanding is situated in the parts of generation?

Luc. No; I should not pretend to affirm that; but, supposing I should place the soul in the head instead of the breast, my principles would remain unaltered: the soul will always be an infinitely rarified matter like the elementary fire that enlivens all the machine.

Poss. And how do you conceive that a rarified matter can have thoughts and sentiment of itself?

Luc. Because I experience it, because all the parts of my body when touched have sensation; because this sensation is diffused over the whole machine; because it cannot be thus diffused but by means of an exceedingly subtile and quick moving matter; because I am a body, and a body cannot be acted upon but by another body; because the interior of my body cannot be penetrated but by very small corpuscles, and consequently that my mind can be no other than the assemblage of these corpuscles.

Poss. We are already agreed in our first dialogue that it is not at all probable that a rock should compose the Iliad. Is a ray of the sun more capable? Suppose
this

this ray to be an hundred thousand times more subtile and rapid; can this light, this rarity produce sentiments and thoughts.

Luc. They may perhaps produce them when in organs properly prepared.

Poss. Thus it is you are always reduced to *perhaps*. Fire can no more think of itself than ice. When I make the supposition that it is fire that thinks in you, that has perception and will, you are forced to allow that it is not of itself that it has will, sentiment, and thought.

Luc. No: it is not of itself; but by the assemblage of this fire and my organs.

Poss. How can you imagine that two bodies which do not think when separate; can produce thought by being combined?

Luc. In like manner as a tree and earth taken separately do not produce fruit; but when combined, the tree being planted in the earth, produces fruit.

Poss. The comparison is no more than a deception. This tree has the *germen* of fruit in itself as may be observed in its buds, and the moisture of the earth develops the substance of these fruits. It must therefore be necessary that fire should have the germ of thought in itself, and that the organs of body should develop this germ.

Luc. What impossibility do you find in that?

Poss. I find that this fire, this quintessential matter, has in itself no more the property of thought than a stone. The production of a being ought to have some resemblance with the being which produces it; now thought, will, and sensation have nothing that resembles the igneous matter.

Luc. Two bodies which are struck together produce motion; yet this motion has no resemblance to these two bodies, it has none of their three dimensions, it has not figure like them. Therefore a being may exist and have nothing that resembles the being which produces it: and consequently thought may originate from the assemblage of two bodies which of themselves do not possess thought.

Poss.

Poff. This comparifon is likewise more dazzling than juft. I fee only matter in thefe two moving bodies. I fee only bodies paffing from one place to another. But when we reafon together I fee no matter in your ideas and mine. I can only fay that I no more conceive how one body has power to remove another, than I can conceive how I have ideas. Thefe are both circumftances equally inexplicable; and both equally prove the exiftence and power of a Supreme Being, author of thought and motion.

Luc. If our foul be not a fubtile fire, an etherial quinteffence, what is it then?

Poff. Of that we know nothing: I can inform you what it is not, but I cannot inform you what it is. I fee that it is a power in myfelf, that I did not give it to myfelf, and confequently that it comes from a being fuperior to myfelf.

Luc. You have not given yourfelf life: you received it from your father; you received thought at the fame time; as he alfo had received it from his father, and fo on, remounting to infinity. You have not a more intimate knowledge of the principle of life than of the principle of thought. This fucceffion of living and thinking beings has exifted from all time.

Poff. I obferve that you are always forced to abandon the fystem of Epicurus and that you dare not fay that the declination of atoms produces thought; but I have already in our former dialogue refuted the eternal fucceffion of fenfible and thinking beings. I have informed you that if there had been material beings, thinking of themfelves, it would follow that thought was a neceffary attribute effential to all matter; that if matter thought neceffarily of itfelf, all matter would think; now that is not the cafe; therefore it cannot be defended to admit a fucceffion of material beings thinking of themfelves.

Luc. This reafoning which you repeat, does not hinder but that a father may communicate a foul to his fon in begetting his body. This foul and body grow up together, they become ftrong, they are fubject to maladies and the infirmities of old age. The decay of our forces
is

is accompanied by the decay of our judgment, the effect ceases with the cause, and the soul is dissolved like the smoke in the air.

Præterea gigni pariter cum corpore & unâ
Crescere sentimus, pariterq; senescere mentem.
Nam veluti infirmo pueri, teneroque vagantur
Corpore: sic animi sequitur sententia tenuis.
Inde ubi robustis adolevit viribus ætas,
Consilium quoque majus & auctior est animi vis,
Post ubi jam validis quassatum est viribus ævi
Corpus, & obtusis ceciderunt viribus artus,
Claudicat ingenium, delirat linguaque, mensque,
Omnia deficiunt atque uno tempore defunt.
Ergo dissolvi quoque convenit omnem animâ
Naturam ceu fumum in altas aeris auras:
Quandoquidem gigni pariter, pariterque videmus
Crescere, & ut docui, simul ævo fessa fatiscit.

Poss. These are beautiful verses: but do you teach me by them what is the nature of the soul?

Luc. No: I relate its history, and I reason with probability.

Poss. What probability is there that a father communicates to his son the faculty of thinking?

Luc. Do not you every day observe that children have the inclinations of their fathers in like manner as they have their resemblance?

Poss. But has not a father, in begetting a son, acted like a blind man? Did he intend or purpose to produce a soul and thoughts in the enjoyment of his wife? Do either the one or the other know how the infant is formed in its mother's womb? Are we not compelled to recur to some superior cause in this as well as in the other operations of nature that we have examined? Do not you perceive, if you are ingenuous, that men can give themselves nothing, but are under the power of an absolute master.

I

Luc.

Luc. If you know more than I, then tell me what is the soul?

Poss. I do not pretend to know more than you. Let us assist and enlighten each other. Tell me first what is vegetation.

Luc. It is an internal motion which carries the juices of the earth into a plant, causes it to grow, developes its fruits, extends its leaves, &c.

Poss. You doubtless cannot think that there is a being called *vegetation*, which performs these wonders.

Luc. Who has ever supposed it?

Poss. You ought to conclude from our first dialogue, that the tree hath not given itself the power of vegetation.

Luc. I am forced to allow it.

Poss. And life; will you tell me what it is?

Luc. It is vegetation, accompanied with consciousness in an organized body.

Poss. And there is no being called *life* which gives this consciousness to an organized body?

Luc. Doubtless no. Vegetation and life are words which signify vegetating and living things.

Poss. If the tree and the animal could not give themselves vegetation and life, can you have given yourself thought?

Luc. I think I can, for I think of what I please. My will was to converse with you on metaphysics, and I accordingly converse with you.

Poss. You think yourself then to be master of your ideas: you consequently know what thoughts you will have in an hour or in a quarter of an hour?

Luc. I confess that I do not know.

Poss. You have often ideas when you sleep; you make verses in a dream; Cæsar conquers towns; I resolve problems; and dogs of chase pursue stags in their sleep. Ideas are produced in us independent of our will; they are given us by a Superior Cause.

Luc. How do you understand this? Do you pretend that the Supreme Being is continually employed in giving ideas, or that he has created incorporeal substances,

stances, which afterwards have ideas of themselves. sometimes by the help of sense and sometimes without ! Are then substances formed at the moment of the conception of the animal ? Are they formed previously ? and do they wait for bodies into which they may insinuate themselves ? or do they not lodge themselves till the animal is capable of receiving them ? or lastly, is it in the Supreme Being that every animated being beholds the ideas of things ? What is your opinion ?

Poff. When you shall have informed me how your will immediately produces motion in your body, how your arm obeys your will, how we receive life, how our aliments digest, how corn is transformed into blood, I will tell you how we have ideas. The world may in some future time have new lights ; but from the time of Thales to the present age, we have made no discovery of these things. All that we can do is to be sensible of our own impotence, to acknowledge a Supreme Being, and to be on our guard against forming systems.

Between a SAVAGE and a BATCHELOR.

D I A L O G U E I.

A certain Governor of Cayenne brought home a Savage from Guiana, who had naturally a great Share of Sense, and spoke very good French. A Batchelor of Paris had the Honor of the following Conversation with him.

Batchelor.

MR. Savage, you have doubtless known many of your countrymen who passed their lives entirely alone ? For it is said that that is the natural life of man, and that society is only an artificial depravation.

Savage. I never saw any of that kind of people ; man seems to me to be born for society like many other animals ;

mals; every species has its instinct; we live all in society with each other.

Batch. How! in society? You have then handsome walled towns, kings who have courts, public spectacles, convents, universities, libraries and taverns.

Savage. No: are there not on your continent, as I have heard, Arabians and Scythians who know nothing of all that, and who notwithstanding form very considerable nations? We live like them. Neighbours assist each other. We dwell in a hot country in which we have few wants; we easily procure food; we marry, we beget children, we bring them up, we die: this is just what you do, a few ceremonies excepted.

Batch. But, Sir, are not you then a savage!

Savage. I do not understand what you mean by that word.

Batch. Nor I much better; I must recollect; we call that man a savage who is ill humored and avoids company.

Savage. I have already told you that we live together in our families.

Batch. We likewise call those beasts savages which are not tame and hide themselves in the woods; and from thence we have given the name of savage to a man who lives in the woods.

Savage. I go into the woods as you do when you hunt.

Batch. Do you think sometimes?

Savage. One cannot avoid having some ideas.

Batch. I should be curious to know what are your ideas; what do you think of man?

Savage. I think that he is an animal that possesses the faculties of reason, speech and laughter, and who uses his hands much more readily than the ape. I have seen many species of them, white like you, red like me, black like those who are under the governor of Cayenne. You have a beard, we have none; the negroes have wool, but you and I have hair. They say that in your northern countries the hair of all the people is white; in our
America

America it is universally black : and this is all I know of the matter.

Batch. But your soul, Sir? Your soul? What notion have you of it? Whence does it proceed? What is it? How does it act? Where does it go?

Savage. I do not know : I have never seen it.

Batch. *A-propòs*, do you believe that brutes are machines?

Savage. They appear to me to be organized machines, endued with thought and memory.

Batch. And you yourself, Mr. Savage, what do you imagine yourself to possess superior to brutes?

Savage. A memory infinitely superior, many more ideas, and as I have already observed, a tongue that forms incomparably more sounds than the tongue of brutes, with hands much more active, and the faculty of laughing when excited to it by a profound reasoner.

Batch. And, if you please, how have you all that? And what is the nature of your spirit? How does your soul animate your body? Do you always think? Is your will free?

Savage. Here are a number of questions. You ask me how I possess that which God has deigned to give to man : which is as if you were to ask me how I came to be born? It is proper since I am born a man, that I should possess those things which are peculiar to man, as a tree has bark, roots and leaves. You wish me to know the nature of my spirit. I did not give it to myself and cannot know. Neither am I better acquainted with the manner in which my soul animates my body. It appears to me that a person ought to have seen the first mover or spring of your watch, before he can determine by what means it denotes the hour. You ask me if I think always : no. I have sometimes demi-ideas, as when I behold objects from afar and confusedly. Sometimes I have stronger ideas, as when I see an object nearer, I distinguish it better ; sometimes I have no ideas at all, as when I shut my eyes I see nothing. You ask me if my will is free? I do not understand you : these are things

things which you no doubt are acquainted with, and I shall be glad if you will explain them.

Batch. O, yes to be sure; I have studied all these matters. I can talk to you a month at a time without stopping and you not understand a word. Tell me now, are you acquainted with the good and evil, the just and unjust? Do you know which government is best? Which worship is best? Do you know the law of nations? The public law? The civil law? The canon law? What were the names of the first man and woman who peopled America? Do you know for what purpose it rains in the sea, and why you have no beard?

Savage. In reality, Sir, you have taken rather an unfair advantage of the confession I made just now, of my memory being better than that of the brutes. I am scarce able to recollect the questions you have put to me. You talk of good and evil, of just and unjust; it appears to me that every thing that gives you pleasure without doing hurt to any one, is very good and very just: that that which is hurtful to others, without being pleasing to ourselves, is abominable: and that that which gives us pleasure but is hurtful to others, is good for us at the moment, dangerous to ourselves, and very bad for the rest of mankind.

Batch. And with these maxims you live in society?

Savage. Yes, with our relations and neighbours, without much pain or care we calmly pass our hundred years, and many even reach an hundred and twenty; after which our bodies fertilizes the land by which it was nourished.

Batch. You seem to be a sensible man; I wish to set your mind to rights; let us dine together, after which we will proceed to philosophize methodically.

DIALOGUE II.

Savage.

I Have been eating food that does not appear proper for me, tho' I have a very good stomach; you have made me eat when I was no longer hungry, and drink when I was no longer dry. My legs are not so firm as they were before dinner; my head is heavier, and my ideas are not so clear. I never experienced this diminution of myself in my own country. The more one here puts into the body the more the being is lost. Pray tell me what is the cause of this defect.

Batch. I will tell you. First, with regard to what happens to your legs, I know nothing, but the physicians do, and to them you may address yourself. With regard to what passes in your head I am well acquainted with it; therefore attend: the soul possessing no place is placed in the pineal gland, or *corpus callosum*, in the middle of the head. The animal spirits, which are raised from the stomach, mount to the soul which they cannot touch, because they are matter and it is not. Now, as they cannot act on each other, it thence comes to pass that the soul receives their impression; and as it is simple, and consequently incapable of change, this occasions a change in it, it becomes heavy and benumbed when we have eaten too much; whence it happens that many great men sleep after dinner.

Savage. What you say appears to me to be very ingenious and very profound; do me the favour to explain it by some means within my comprehension.

Batch. I have told you all that can be said on this sublime subject; but to oblige you I will be a little more diffuse: let us proceed by degrees: do you know that this world is the best possible of worlds?

Savage. How? Is it impossible for the infinite Being to make something better than what we see?

Batch. Assuredly so, for this we see is the best possible. It is true that men rob and cut one another's throats: but

but this is always an eulogium on virtue and mildness. A dozen millions of you Americans were formerly massacred; but it was to render the others reasonable. A calculator has shewn that since a certain Trojan war you never heard of, till that of Acadia which you know, there have been slain in pitched battles, five hundred and fifty-five millions six hundred and fifty thousand men, without counting women and children killed in towns that have been set on fire; but this is for the public good. Four or five thousand cruel disorders to which men are subject make us know the value of health; and the crimes, with which the earth is overspread, give a wonderful relief and advantage to the merit of pious men, of which number I am one. You see that all this is the best in the world, at least for me.

Now, things could not be in this perfection if the soul were not in the pineal gland. For—But let us proceed step by step; what idea have you of laws, of just and unjust, and of the beautiful and the *to kalon*, as Plato says?

Savage. But, Sir, in proceeding step by step, you talk of an hundred things at once.

Batch. It is not customary to talk otherwise in conversation. Come then, tell me, who made the laws in your country?

Savage. The public good.

Batch. This word implies much; we have not one more expressive; how do you understand it pray?

Savage. I understand that those who had cocoa-trees and maize prevented others from touching them, and that those who had not were obliged to work in order to acquire the right of eating a part. All that I have seen both in my own country and yours, assure me that there is no other *spirit of laws*.

Batch. But the women, Mr. Savage, the women?

Savage. Well, then, the women!—I am mightily delighted with them when they are beautiful and mild; they are superior to our cocoa-nuts, which is a fruit we do not choose others should touch: people have no more right to take away my wife than my child. They say

there are people who think it proper, they are their own masters, and every one has a right to do what he will with his own.

Batch. But the successions, partitions, heirs and collaterals?

Savage. It is proper that there should be successions. I am incapable of possessing my land after I am dead: I leave it to my son: if I have two, they divide it between them. I understand that there are a variety of laws among you; your laws leave every thing to the eldest, and nothing to the younger; interest has dictated this absurd law: it was probably made by the elder children, or by the fathers who chose that the elder should domineer.

Batch. What are the best laws in your opinion?

Savage. Those which have most consulted the interests of all men without exception.

Batch. And where are these laws to be found?

Savage. No where, that I ever heard of.

Batch. You must tell whence came the men in your country? Who do you think peopled America?

Savage. We believe that God peopled it.

Batch. That is no answer. I ask you from what country your first men came?

Savage. From the same country as our first trees. You gentlemen who inhabit Europe seem to be very facetious, when you pretend that we can have nothing without you. We have as much right to believe that we are your fathers as you have to imagine yourselves ours.

Batch. Here's a headstrong and obstinate savage!

Savage. And an idle prating batchelor.

Batch. Halloo, here, Mr. Savage; another word with you; do you think it proper in Guiana to kill those who are not of your opinion?

Savage. Yes; provided we eat them.

Batch. You are pleasant.—And the constitution, what think you of it?

Savage. Adieu.

ARIS-

ARISTUS and ACROTAL.

Acrotal.

OThe glorious time when the venerable bearded scholars of the university knocked down that villainous mathematician Ramus, and dragged his corpse naked and bleeding to the gates of all the colleges to make the *amende honorable*!

Aristus. This Ramus must then have been a very detestable fellow? he must have committed very enormous crimes?

Acrotal. Certainly: he had written against Aristotle, and was suspected of even worse than that. It is to be regretted that they did not also knock down Charon, who attempted to write about wisdom, and Montagne, who was so impudent as to reason and joke. These reasoning gentry are the pest of a state.

Aristus. People who reason ill may be insupportable: yet I do not see that a poor man ought to be hanged for a few false syllogisms: but it seems to me that the men you speak of reasoned very well.

Acrotal. So much the worse: it is that which makes them the more dangerous.

Aristus. In what respect, if you please? Have you ever seen philosophers carry war, famine, or pestilence into a country? Boyle, for example, against whom you exclaim with so much virulence, did he ever wish to cut the dykes of Holland to drown the inhabitants, as it is said a great minister who was no philosopher wished to do?

Acrotal. Would to God this Boyle had been drowned together with his heretical Hollanders! Was there ever known a more abominable man? he exposes things with a fidelity so odious, he places both sides of the question before the eyes with an impartiality so shameful, with a perspicuity so intolerable, that he puts people, who possess only common sense, in a condition to judge and even doubt; it is not to be endured; and for my part, I con-

self, that I am in a holy rage when I hear either that man or any like him mentioned.

Aristus. I do not think any of them ever intended to put you in a rage.—But whither are you running so fast?

Acrotal. To Mons. Bardo Bardi. It is two days since I requested an audience; but he is sometimes with his page and sometimes with his mistress Signora Buona Roba, that I have not yet been able to have the honor of seeing him.

Aristus. He is now at the opera. What pressing business have you to relate to him?

Acrotal. I intend to beg him to use his interest in procuring a certain Abbé to be burnt, who insinuates among us the sentiments of Locke, an English philosopher! think how horrible!

Aristus. In what do the horrible sentiments of this English philosopher consist, pray?

Acrotal. How can I tell it? It is, for example, that we do not give ourselves ideas; that God, who is the master of all, can give sensations and ideas to whatever being he deigns to choose; that we are acquainted with neither the elements nor the essence of matter; that men do not think always; that a drunken man who is asleep has no clear ideas of sleep; and a hundred other impertinences of this nature.

Aristus. Well then, supposing your poor Abbé, the disciple of Locke, is ill advised enough not to believe that a drunken man asleep thinks much, ought he to be persecuted on that account? What hurt has he done? Has he conspired against the state? Has he preached theft, calumny, or homicide from the pulpit? Between ourselves, now tell me, did a philosopher ever cause the least trouble in society?

Acrotal. Never, I must confess.

Aristus. Are they not, for the most part, solitary men? Are they not poor, unprotected, and unsupported? and is it not partly on this account that you persecute them, because you think you can oppress them with ease?

Acrotal.

Acrotal. It is true that formerly there were scarce any in this sect but citizens without credit; the Socrates', the Pomponaces, the Erasmus', the Boyles, the Descartes', but at present philosophy is mounted on the tribunals, and even on thrones; reason is esteemed and valued every where, except in certain countries, where we have established good order and regulation. This is what is really deplorable; and is the reason why we endeavour to destroy, at least, those philosophers who have neither fortune, power, nor honors in the world; not being able to avenge ourselves on those that have.

Aristus. Avenge yourselves! and for what pray? have these poor people ever disputed your employs, your prerogatives or your treasures?

Acrotal. No: but they despise us, if I must speak out; they sometimes deride us, and we never forgive.

Aristus. If they deride you they act wrong in that respect, for we ought to deride no one; but tell me, I beseech you, why the laws of the magistracy have never been rallied in any country, while you are so unmercifully jested at according to your account?

Acrotal. In fact, this is what makes us so angry; for we are above the laws.

Aristus. And this is precisely that which makes so many respectable people turn you into ridicule. You wish that laws founded on universal reason and by the Greeks called *Daughters of Heaven*, should give place to I know not what opinions, begot by caprice, and as often destroyed by it. Do not you perceive that that which is just, clear, and evident, is eternally respected by all the world, and that chimeras cannot always attract the same veneration?

Acrotal. Let us leave the law and the judges and attend to the philosophers; it is certain that they have said as many ridiculous things as we; so that we may set ourselves against them if it were only on the principle of jealousy in business or trade.

Aristus. Many have said ridiculous things, no doubt, for they were but men; but their whims have never
lighted

lighted up civil wars, and yours have caused more than one.

Acrotal. And it is in that respect that we are admirable. Is there any thing more flattering than to have troubled the repose of the world by a few arguments? Do not we resemble those ancient magicians who raised tempests merely by words? We should be masters of the world were it not for those rascals the men of wit.

Aristus. Very well; tell them, if you please, that they have no wit; prove that they reason ill: they have jested upon you, retort again upon them. But I must intreat your clemency for this poor disciple of Locke, whom you wish to have burned. Do not you see, Doctor, that burning is not in fashion at present?

Acrotal. You are right, some other method must be found to impose silence on these little philosophers.

Aristus. Believe me, keep silence with yourself, do not trouble yourself any more with reasoning, be good and compassionate men, do not seek for evil where it is not, and it will cease to be where it really is.

LUCIAN, ERASMUS and RABELAIS, in the Elysian Fields.

LUCIAN had for some time made an acquaintance with Erasmus, notwithstanding his aversion to every thing that came from the frontiers of Germany. He did not think that a Grecian ought to demean himself so much as to talk to a Dutchman; but this Dutchman appearing to him a very conversible sort of a dead man, they had the following dialogue together:

Luc. You then acted in a barbarous country the same as I did in the most polished nation on earth: you ridiculed every thing?

Eras. Alas! I wished to do it; it would have been a great comfort to a poor theologian like me, but I could not take the same liberties as you did.

Luc. That astonishes me. Men love very well to have their follies shewn them in general, provided no particular

particular person is aimed at; every one then applies the ridicule of himself to his neighbour, and all the world laugh at each other's expence. Was it not the same with your cotemporaries?

Eraf. There was a vast difference between the ridiculous people of your time and mine. You had only to deal with gods who were played on the stage, and with philosophers where credit was still less than that of the gods: but I was surrounded with fanatics, and had need of the greatest circumspection to avoid being burned by the one, or assassinated by the other.

Luc. How could you contrive to laugh in this alternative?

Eraf. I hardly laughed at all; and passed for a much more jocular person than I really was. I was thought very gay and ingenious, because all the world was then melancholy. Every one was deeply employed on certain abstracted ideas, which rendered men atrabilarious. He who thought that a body could be in two places at the same time, was ready to cut the throat of him who explained the same thing by a different method. And what was still worse, a man in my situation who stood neuter would have been taken for a monster.

Luc. What strange men these barbarians were among whom you lived! In my time, even the Getes and Massagetes were more mild and reasonable. And, what pray, was the profession you followed in this horrible country?

Eraf. I was a Dutch Monk.

Luc. Monk! What profession is that?

Eraf. It is to have no profession, to bind one's self by an inviolable oath to be useless to mankind, to be absurd and slavish, and to live at the expence of others.

Luc. A very infamous trade this! How could you with the sense you possess, embrace a state which disgraces human nature? Let us pass over the living at the expence of others: but to make a vow to be without common sense, and to lose one's liberty?

Eraf. I was then young, and having neither relations nor friends, I suffered myself to be seduced by beggars, who were desirous of increasing their number.

Luc.

Luc. What! Were there many men of that species?

Eras. In Europe, there were about six or seven thousand.

Luc. Good heavens! The world is become very stupid and barbarous since I quitted it! Horace had reason, when he said that every thing grows worse: *progeniem vitiosorem*.

Eras. That which comforts me is, that in my time all the world was mounted on the highest step of folly; it must therefore happen that they will descend, that some among them may recover a tincture of reason.

Luc. I doubt that very much: tell me, I pray you, what were the principal follies of your time?

Eras. Here is a list which I always carry about me; read.

Luc. It is very long.

[*Lucian reads and bursts into a laugh; Rabelais comes up.*]

Rab. Gentlemen, when laughing goes forward, I like to be of the company; what is the present concern?

Luc. Extravagancies.

Rab. Ah! There I'm your man.

Luc. to Eras. What original is this?

Eras. A man who has been more bold and jocular than myself; but he was only a priest, and might take more liberty than I who was a monk.

Luc. to Rab. Did you, like Erasmus, make a vow to live at the expence of others?

Rab. Doubly: for I was both priest and physician. I was born with good natural abilities, and became as learned as Erasmus; but seeing that wisdom and learning in general lead only to the hospital or the gibbet, and that the half-pleasantry of Erasmus was sometimes persecuted; I determined to be more foolish than all my countrymen together. I composed a large book of idle stories, filled with obscenity, in which I turned into ridicule all superstitions and ceremonies, every thing that was revered in my country, all conditions, from the king and pontiff, down to the doctor of theology which is the lowest step. I dedicated my book to a cardinal, and made even those laugh who despised me.

Luc.

Luc. What is a cardinal, Erasmus?

Eraf. It is a priest clothed in red, who receives an hundred thousand crowns a year for doing nothing at all.

Luc. You must confess at least that these cardinals knew their own interest perfectly. All your citizens, it seems, were not then such great fools as you pretend.

Eraf. If Monsieur Rabelais will permit me to speak; the cardinals had another species of folly, that of governing or domineering; and, as it is much easier to subjugate fools than men of sense, they wished to overthrow reason which began to rear its head. Monsieur Rabelais, whom you see imitated the first Brutus, who counterfeited the madman to escape the jealousy and tyranny of the Tarquins.

Luc. All that you tell confirms me in the opinion that it was better to live in my time than in yours. These cardinals you speak of were then masters of the whole world since they had the command of the fools?

Rab. No: there was an old fool above them.

Luc. And what was he called?

Rab. A pope*. The folly of this man consisted in affirming himself to be infallible, and the master of kings; and he said and repeated this so often, and had it cried so frequently by the monks, that at length all Europe became persuaded of it.

Luc. Ah! you go much beyond us in madness. The fables of Jupiter, Neptune and Pluto, which I so often derided, were respectable in comparison to the follies with which your world has been infatuated. I cannot conceive how you managed with safety to turn into ridicule, people who ought to fear ridicule worse than a conspiracy. For in short, there is no mocking one's governors with impunity, and I was wise enough not to

* The word in the original is Papegaut (mock bird to shoot at,) and is either used for the sake of the jingle between it and the word pape (pope) or else for political reasons. Whatever may have been the whim or the intention of the author, the expression cannot be preserved in the English: neither is it in reality, of any great importance. N.

say a single word about the Roman emperors. What! Did your nation adore a Papegaut? You treated this Papegaut with all the ridicule imaginable, and your nation allowed it? It was then very patient.

Rab. I must acquaint you with the character of my nation. It was composed of ignorance, superstition, stupidity, cruelty and pleasantry. They began by hanging all those who spoke seriously against the popes and cardinals. The country of the Welches, of which I am a native, flowed with blood; but these executions being finished, the whole nation set about dancing, singing, gallantry, drinking, and laughter. I took my countrymen on their weak side, I spoke of drinking, I talked obscenity, and by the help of this secret was permitted to say any thing. Men of sense understood the finesse and thanked me; while the baser part of the nation saw only the coarseness and were delighted. Thus all the world loved instead of persecuting me.

Luc. You make me very desirous of seeing your book. Have not you a copy in your pocket? And you Erasmus, cannot you lend me your writings?

[Here Erasmus and Rabelais give their works to Lucian, who reads; and in the mean time the two philosophers converse together.]

Rabelais to Erasmus. I have seen your writings, and you have not read mine, because I lived some time after you: you have, perhaps, been too reserved in your raileries, and I too free in mine. But at present we both think alike. For my part, I laugh when I see a doctor arrive in this country.

Eraf. And for my part, I deplore his situation; I say to myself, behold an unfortunate wretch who has laboured all his life to deceive himself, and who gains nothing by being here extricated from error.

Rab. And is not that a gain in itself?

Eraf. 'Tis a small matter when one has it no longer in one's power to undeceive others. The great pleasure is to shew the way to one's friends who wander, and the dead want no instruction.

Erasmus

Erasmus and Rabalais argued a considerable time. Lucian rejoined them, after having read the chapter on the Torchecul, or A—e-wiper, and some pages of the Eulogy on Folly. Afterwards meeting Dr. Swift, they all four went to supper together.

DRAMATIC NONSENSE.

A Jesuit preaching to the Chinese.

I Tell you, my dear brethren, that it is the Lord's will that all men should be chosen vessels; it depends upon yourselves only to become these vessels; you have no more to do but to believe all that I declare to you: your mind, your heart, your thoughts, your sentiments, are all in your own power. Jesus Christ died for all men, as is well known; grace is given to all. If you have not contrition, you have attrition; and if you have not attrition, you have your own proper forces and mine.

A Jansenist arrives.

You lie, you child of Escobar and of perdition; you preach error and falsehood. No: Jesus died only for many; grace is given to few; attrition is nonsense; the Chinese have no proper forces, and your prayers are blasphemies; for as Augustin and Paul——

Jesuit. Silence thou heretic! Hence thou enemy of St. Peter! My brethren, do not listen to this innovator, who cites Augustin and Paul; and come hither that I may baptize ye.

Jansf. Take care, my brethren; do not suffer yourselves to be baptized by the hands of a Molinist, you will be effectually damn'd if you do. I will baptize you myself in a little less than a year, when I shall have taught you what is grace.

Quaker. Ah! my brethren, be not baptized neither by the paw of this fox nor the claw of this tyger. Trust unto me, it is better not to be baptized at all, for that is the usage with us. Baptism may be good, but it may

well be passed by. All that is needful is to have the spirit. Wait and he will come, and ye shall then know more in a moment than these false disciples can speak in their whole lives.

Church of England Preacher. Ah! my flock, what monsters came here to devour you! my dear sheep, do you not know that the church of England is the only pure church? Have not our preachers told you as much when they came to Canton to regale themselves with punch?

Jesuit. The English are deserters; they have renounced our Pope, and the Pope is infallible.

Lutheran. Your Pope is an ass, as Luther hath declared it. My dear Chinese, defy the Pope, the English, the Molinists, the Jansenists, and the Quakers, and believe only in the Lutherans; pronounce only these words, *in, cum, sub*, and drink of the best.

Puritan. We deplore, my brethren, your blindness and the blindness of these people. But, thanks be to God, the eternal hath ordained that I should come to Pekin, even at this day appointed, to confound these boasters. Listen unto me, and let us sup together in the morning; for you know, that in the fourth age of *Denis le petit*——

Mussulman. By the death of Mahomet here are fine discourses! If any one of these dogs shall open his mouth to bark again, I'll cut off both his ears; as to their prepuces, I shall not give myself the trouble; it is you, my dear Chinese, that I intend to circumcise. I allow you eight days to prepare yourselves, and if any one of you after that time shall think proper to drink wine, I shall take care to resent it.

Jew. Ah, my children, if you chuse to be circumcised give me the preference; you shall drink as much wine as you please; but if you are so impious as to eat of the hare, which, as you know, chews the cud, but has not the foot cloven, I will put you to the sword when I am strongest, or, if you would rather prefer it, I will stone you to death; for——

Chinese.

Chinese. By Confucius and the five kings, these people have lost their senses! Mr. Keeper of the mad houses of China, shut each of these poor fools into his cell.

On the EDUCATION of DAUGHTERS.

Melinda.

ERASTUS is just gone, and I find you in a profound reverie. He is young, well made, witty, rich and amiable; I therefore excuse your meditating.

Sophronia. I confess he is all that you say.

Mel. And yet more, he loves you.

Soph. I confess that too.

Mel. And, I believe, you are not insensible of his passion.

Soph. My friendship for you does not permit me to conceal even that from you.

Mel. To this confession add another, that he is shortly to be married to you.

Soph. With the same confidence I can inform you, that I shall never be married to him.

Mel. What! does your mother oppose a match so equal and suitable to you?

Soph. No: she leaves me the liberty of chusing: I love Erastus, but I am resolved never to marry him.

Mel. And what reason can you have to tyrannize over yourself in this manner.

Soph. The fear of being tyrannized over. Erastus has wit, but it is imperious and cutting; he has graces, but he would soon make use of them to others besides me; I do not wish to be the rival of one of those who sell their charms, who unhappily give eclat to him who purchases them, who disturb one half of a city with their shew and equipage, and ruin the other half by their example; and who triumph in public over the misfortune of a virtuous woman reduced to deplore her situation in solitude. I have a strong inclination for Erastus, but I have studied his character and found it too contrary to
that

that inclination ; I wish to be happy, but cannot be so with him. I therefore intend to espouse Aristus, whom I esteem and hope to love.

Mel. You are very reasonable for your age. There are few girls whom the fear of a disagreeable future, can prevent from enjoying an agreeable present time. How have you acquired this command of yourself?

Soph. I owe the little reason I have to the education my mother gave me. She did not bring me up in a convent, because I was not intended to pass my life in one. I am concerned for those daughters, whose education has been entrusted by their mothers to religious women, as the care of their early infancy was entrusted to strange nurses. I have been informed, that in convents, as well as most colleges in which youth are brought up, scarcely any thing is learned but what ought to be forgot ; the earliest part of the best hours of life are buried in stupidity. You scarce come out of your prison but to be promised to an unknown person who has seen you at the grate ; whatever he may be, you regard him as your deliverer, and if he were an ape you would think yourself very happy ; you give yourself to him without knowing him ; you live with him without loving him ; it is a bargain that was made without your concurrence, and both parties quickly repent of it.

My mother thought me worthy to think for myself, and one day to choose for myself. If I had been born to get my living, she would have had me taught some kind of work suitable to my sex ; but being born to live in society, she had me early instructed in every thing that relates to society ; she formed my mind by causing me to fear the rocks of wit ; she led me to all the best public entertainments which inspire taste without corrupting the manners, where the dangers of the passions are set forth in a still more striking manner than their charms, where decency and order reign, where the best manner of thought and expression is insensibly attained. Tragedy has often appeared to me to be the school for greatness of mind, and comedy the school of politeness ; and I can venture to affirm, that these instructions which
are

are regarded as mere amusements have been more useful to me than books. In short my mother has always regarded me as a thinking being, whose mind was to be cultivated and not as a puppet, which is adjusted, shewn, and laid by the moment after.

The ANCIENTS and the MODERNS; or, The
TOILETTE of MADAME de POMPADOUR.

Madame de Pompadour.

WHO is this lady with the aquiline nose and large black eyes, whose person is so tall and noble, whose manner is so stately, and at the same time so coquettish, who comes into my toilet without announcing herself, and makes her reverence like one of the religious?

Tullia. I am Tullia, born at Rome about eighteen hundred years ago. I make my reverence after the manner of the Romans, and not in the French manner. I am come I know not whence to see your country, your person and your toilet.

Pomp. Ah! Madam, do me the honor to be seated. An arm chair for Madam Tullia.

Tullia. Who? me Madam, to sit on this inconvenient kind of little throne, that my legs may hang down and become all red.

Pomp. How will you sit then, Madam?

Tullia. On a good bed, Madam.

Pomp. Ah! I understand, you mean to say a good couch. See there is one on which you may extend yourself much at your ease.

Tullia. I am happy to see that the French are as well furnished as us.

Pomp. Why, Madam, you have no stockings, your legs are naked; really they are very prettily ornamented with ribband in form of a buskin.

Tullia. We were unacquainted with stockings; they are an agreeable and commodious invention which I prefer to our buskins.

Pomp. God forgive me! Madam, I believe you are without a shift!

Tullia. We wore none in our time, Madam.

Pomp. And in what time did you live Madam?

Tullia. In the time of Sylla, Pompey, Cæsar, Cato, Catiline, Cicero, whose daughter I have the honor to be; of that Cicero whom one of the poets under your protection has made to speak barbarous verse. I went yesterday to the Comedy at Paris, where Catilina was played, and all the other personages of my time; I did not know one of them again. My father advised me to make advances to Catilina; I was very much surprised.—But Madam, you seem to have beautiful mirrors there, your chamber is full of them. Our mirrors were not a sixth part so large as yours. Are they of steel?

Pomp. No, Madam, they are made of sand, and nothing is more common with us.

Tullia. What a beautiful art! I confess that we wanted it. Ah, what a fine drawing is there.

Pomp. It is not a drawing but a print; it is made with lamp black only; an hundred copies can be taken in a day, and the secret eternizes this picture which time consumes.

Tullia. This secret is admirable. We Romans never had any thing to compare to it.

[A Learned Man who assisted at the toilet, then took up the discourse, and said to Tullia, at the same time taking a book out of his pocket]

You will be much more surprised, Madam, when you are informed that this book is not written by the hand, but printed nearly in the same manner as the engravings are, and that this invention likewise eternizes the works of genius.

[The Learned Man then presented his book to Tullia, it was a collection of verses for the Marchioness: Tullia read a page, admired the characters, and said to the author]

Tullia. Sir, the impression is very fine, and if it can immortalize verses like these, it seems to be the greatest proof

proof of what art can do. But have you not at least employed this invention to print the works of my father.

The Learned Man. Yes, Madam, but they are now no more read; I am concerned for your father, but at present we hardly know his name.

[Chocolate, tea, coffee, and glasses were then brought. Tullia was astonished to see currants and cream frozen in summer. She was informed that these frozen liquors were composed in six minutes, by surrounding them with salt-petre, and that it was by motion that this fixation and freezing cold were produced. She was mute with admiration. The dark colour of the chocolate and coffee inspired her at first with some aversion. She demanded how these liquors were extracted from the plants of the country. A Duke who happened to be present answered thus]

The fruits from which these drinks are composed, are produced in the other world, and in the farthest parts of Arabia.

Tullia. As to Arabia, I have heard of it; but I have never heard of what you call coffee; and as to the other world, I know no other than that from which I came: and I assure you that there is no chocolate in that world.

The Duke. The world we speak of, Madam, is a great continent called America, almost as large as Europe, Asia and Africa together; and concerning which we have much more certain intelligence than of the world you come from.

Tullia. How! We who called ourselves masters of the world, did we possess only the half? The consideration is humiliating.

[The Learned Man being chagrined that Madam Tullia had not approved his verses, replied to her in an abrupt manner]

You Romans, who boasted the conquest of the world, did not conquer the twentieth part. We have now at the extreme parts of Europe, an empire, which alone is more vast than all the Roman Empire. It is governed by a Lady who has more wit than you, who is

handsomer than you, and who wears a shift. If she were to read my verses I am sure she would admire them.

[The Marchioness imposed silence on the Sage, who was wanting in respect to a Roman Lady, and the daughter of Cicero. My Lord Duke explained the manner in which America was discovered; and taking out his watch, to which an elegant little compass was pendant, shewed her that it was with the needle that ships had arrived at the other hemisphere. The surprise of the Roman Lady was redoubled at every word he spoke and every thing she saw; at length she exclaimed]

I begin to fear that the moderns have gone beyond the ancients; I came to enquire, and perceive that I shall carry unpleasing news to my father.

The Duke replied. Comfort yourself, Madam, no man among us approaches your illustrious father, not even the author of the Gazette Ecclesiastique, or the Journal Chretien; no man approaches Cæsar with whom you lived, nor your Scipios which preceded. Nature may form great minds now as in former ages; but these are buds which come to no maturity in a bad soil.

It is not thus with the arts and sciences; time and lucky chances have brought them nearer to perfection. It is easier for us, for example, to have Sophocles and Euripides than men like your father, because we have theatres, but no tribunals whence the people may be harangued. You have hissed the tragedy of Catilina; but when you shall have seen the Phædra of Racine performed, you will perhaps agree that the Phædra is prodigiously superior to the model which you find in Euripides. I hope you will agree that our Moliere goes beyond your Terence. I hope to have the honor of attending you to the opera, where you will be astonished to hear the performers sing in parts. This is another art that was unknown to you.

See here, Madam, a small telescope, be so good as to apply your eye to this glass and observe that house which is at a league distance.

Tullia. By the immortal Gods! the house is at the end of the glass, and much larger than before.

The

The Duke. With this toy, Madam, it is that we have seen new heavens, as with the needle we have discovered a new hemisphere. Do you observe this other instrument in which is a little glass tube properly fixed? By this it is that we discover the exact quantity of the weight of the air.

At length, after many trials, a man has arisen who has discovered the first spring of nature, the cause of weight, and who has demonstrated that the stars gravitate towards the earth and the earth to the stars. He has unwove (*parfilé*) the light of the sun as our ladies unweave a stuff of gold.

Tullia. What is to unweave, Sir.

The Duke. The equivalent to this word, Madam, is not found in the orations of Cicero. It signifies to separate the parts of a stuff, thread by thread, and take out the gold. This is what Newton has performed with the rays of light; the stars have been submitted to his calculation, and a man named Locke has done the same with the human understanding.

Tullia. You know much for a nobleman; you seem to be much more learned than the Learned Man who was desirous I should admire his verses, and you are much more polite than him.

The Duke. That, Madam, arises from my having had a better education; but for my knowledge, it is very common; the young people of the present age at the time of quitting school know more than all your philosophers of antiquity. It is only to be regretted that we in Europe have substituted half a dozen very imperfect jargons to the beautiful Latin language, of which your father made such an admirable use: but with these gross instruments we have not failed to make very good performances even in the Belles Lettres.

Tullia. The nations which succeeded the Romans must have lived in profound peace always, and there must have been a continual succession of great men from the time of my father to the present, in order to invent so many new arts and to acquire so improved a knowledge of the heavens and earth.

The Duke. Not at all, madam, we are barbarians, we came almost entirely from Scythia to destroy your empire and the arts and sciences. We lived seven or eight hundred years like savages; and to complete our barbarism, we were inundated with a species of men called Monks, who re-immersed in stupidity the people that were conquered and civilized by the Romans. But that which will surprise you is, that in the latter ages of this barbarism, it was among these Monks, these enemies of reason, that nature raised up useful men. Some have invented the art of assisting the sight enfeebled by age; others have kneaded salt-petre with charcoal and formed a powder for the purposes of war, with which we should easily have exterminated the Scipios, Alexander and Cæsar, the Macedonian phalanx, and all your legions; not because we are greater captains than the Scipios, the Alexanders and the Cæsars, but because we are better armed.

Tullia. In every thing you say I behold the politeness of a great lord, with the erudition of a man of condition; you are worthy to have been a senator of Rome.

The Duke. Ah! Madam, you yourself are more worthy to be at the head of our court.

Pomp. Madam Tullia would have been a dangerous rival to me.

Tullia. Consult your fine mirrors made with sand, and you will be convinced that you have nothing to fear.—And so, Sir, you tell me in the politest manner in the world, that you know more than us.

The Duke. I said, Madam, that latter ages are always more informed than former ones, unless there happen some general revolution that has absolutely destroyed all the monuments of antiquity. We have had dreadful tho' transient revolutions; and in these storms we have been happy enough to preserve the works of your father and those of some other great men; so that the sacred fire has never been totally extinguished, and has at length produced an almost universal light. We hiss the barbarous scholastics who have long reigned amongst us, but we respect Cicero and all the ancients who have taught

taught us to think. If we have other physical laws than prevailed in your time, we have no other rule of eloquence, and this is perhaps sufficient to terminate the dispute between the ancients and moderns.

[All the company were of the Duke's opinion. They afterwards went to the opera of Castor and Pollux. Tullia was much pleased with the words and the music qu'on die. She affirmed that such an entertainment was preferable even to the combats of the gladiators.]

The CAPON and the PULLET.

Capon.

GOOD God! my dear, how sorrowful you look; what have you to be afflicted at?

Pullet. My dear friend, ask me rather what I have not. A cursed servant took me on her knees, plunged a long needle into my body, seized my matrix, rolled it about the needle, tore it out and gave it to her cat to eat. So that I am incapable of receiving the favors of the chanter of the morning, and of laying eggs.

Capon. Alas, my dear, I have lost more than you; the operation on me was doubly cruel; neither of us can have any more pleasure in this world: They have made you a Pullet and me a Capon. The only thing that makes my deplorable state more tolerable is, that two days ago, near my coop, I heard two Italian Abbés talk together, to whom the same outrage had been committed, that they might sing with a clearer voice before the pope. They said that men had began by circumcision and ended by castration; they cursed the destinies and the whole human race.

Pullet. What, is it then to give us a clear voice that they deprive us of the best part of ourselves?

Capon. Alas, my poor Pullet, it is to fatten us, and to render our flesh more delicate.

Pullet. Well, and will they be fatter for our being so?

Capon. Yes; for they intend to eat us.

Pullet. To eat us! Ah, the monsters!

Capon. It is their custom; they put us in prison for some days and make us eat a paste of a composition of which they have the secret, and put out our eyes that we may not be disturbed. At length, the day of the feast being come, they pull off our feathers, cut off our heads and roast us. We are served up to them in a large piece of silver; every one speaks what he thinks of us; our funeral oration is made; one says that we taste of the nut; another that our flesh is succulent; our legs, our wings, our breast are commended; and thus our history in this lower world is finished for ever.

Pullet. What abominable rascals! I declare I am ready to faint. What! will they put out my eyes! will they cut off my head! shall I be roasted and eat! These wretches then have no remorse.

Capon. No, my life, the two Abbés I mentioned said that men never have any remorse in doing what they are accustomed to do.

Pullet. The detestable race! I dare say that while they are devouring us they laugh and tell pleasant stories as if nothing had happened.

Capon. You have guessed it. But know for your consolation, if it be any, that these animals who are bipeds like us, but much beneath us, because they have no feathers, have often done the like with their own species. I heard my two Abbés say, that all the Christian and Greek emperors never failed to put out the eyes of their cousins and brothers: that even in the country where we now are, there was one named Debonaire, who had the eyes of his nephew Bernard plucked out. But as to roasting men, nothing is more common among this species. The Abbés said, that more than twenty thousand had been roasted for certain opinions which it would be difficult for a Capon to explain, and which are of no consequence to us.

Pullet. It was apparently for the purpose of eating them that they were roasted.

Capon.

Capon. I cannot positively affirm that. But I remember well that I have often heard that there are countries, and among them that of the Jews, in which men have sometimes eaten each other.

Pullet. Let us pass by that. It is just that so perverse a species should devour itself, and that the earth should be purged of the race. But for me who am peaceable, who have never done any evil, who have even nourished these monsters by my eggs, to be gelded, blinded, beheaded and roasted! Do they treat us in this manner in the other parts of the world?

Capon. The two Abbés say no. They affirm that in a country called India, which is much larger, more beautiful and fertile than ours, the men have a holy law, which for thousand of ages has forbid them to eat us; that even a man named Pythagoras having travelled among this just people, brought this humane law into Europe, which was followed by all his disciples. These good Abbés read Porphyrius the Pythagorean, who has written an excellent book against spits.

Oh the great man! the divine Porphyrius! with what wisdom, with what force, with what tender respect for the Divinity does he prove that we are allied and related to men! that God has given us all the same organs, the same sentiments, the same memory, the same unknown bud of intelligence which developes itself in us to the point determined by the eternal laws, and which neither men nor we shall ever go beyond. In effect, my dear Pullet, is it not an outrage to the Divinity, to say, that we have senses not to be used, and a brain not to have understanding? This imagination, this whim, worthy as they say of a fool named Descartes; is it not the height of ridiculousness, and the vain excuse of barbarity?

The great philosophers of antiquity never condemned us to the spit. They busied themselves in endeavouring to learn our language, and to discover our properties so superior to those of mankind. We were in safety with them as in the golden age. The sages did not kill animals, says Porphyrius, none but barbarians and
priests

priests kill and eat them. He wrote this admirable book to convert one of his disciples who became a christian for the sake of gormandizing.

Pullet. Well; and were not altars erected to this great man who taught virtue to mankind and saved the lives of the animal race.

Capon. No; he was held in detestation among the christians who devour us, and who still execrate his memory: they say he was impious, and that his virtues were false, since he was a Pagan.

Pullet. What shocking prejudices arise from gluttony! The other day I heard a man in the kind of barn which is near our hen-coops, who was speaking alone to other men who were silent; he said, *that God had made a covenant with us and with the other animals called men; that God had forbidden them to nourish themselves with our flesh and blood.* How can they reconcile this positive command with the permission to devour our bodies roasted or boiled? It is impossible when they cut off our heads but that much blood must remain in the veins: this blood necessarily mixes with our flesh; they therefore disobey God in eating us. Besides, is it not sacrilege to kill and devour animals with whom God has made a covenant? It would be a strange treaty whose only clause was to deliver us to death. Either our Creator has no treaty with us, or it is a crime to kill and eat us: there is no medium.

Capon. This is not the only contradiction that prevails among these monsters, our eternal enemies. They have long been reproached for a want of consistency in every thing. They make laws only to violate them, and what is worse, this violation is done for conscience sake. They have invented an hundred sophisms and subterfuges to justify their transgressions. The only use they make of thoughts is to authorise their injustice, and the only use in which they employ speech, is to disguise their thoughts. Imagine to yourself that in the little country in which we live, it is forbidden to eat us two days in the week; yet they find means to elude this law. Besides this law, which

to you may seem favourable, is very barbarous; it commands, that on those days they shall eat the inhabitants of the waters; they seek for victims at the bottom of the seas and rivers. They devour creatures, a single one of which costs the value of ten capons; and this they call fasting and mortifying themselves. In short, I do not believe it possible to imagine a species at the same time more ridiculous and abominable, more extravagant and more sanguinary.

Pullet. Ah, my God! Do not I see the vile scullion yonder coming with his great knife?

Capon. It is done; my life, our last hour is come, let us recommend our souls to God.

Pullet. Why cannot I give an indigestion that may burst the wretch who eats me? But the weak avenge themselves of the strong by vain wishes, and the strong laugh at them.

Capon. Ah, he has got me by the neck! Let us forgive our enemies.

Pullet. I cannot; I am caught and carried away. Adieu, my dear capon.

Capon. Adieu for ever, my dear pullet.

PERICLES, a modern GREEK, and a RUSSIAN.

Pericles.

I Have some questions to ask you. Minos informs me that you are a Greek.

Greek. Minos has told you truth, I was the most humble slave of the sublime Porte.

Per. What do you say of slavery? A Greek a slave!

Greek. Can a Greek be any thing else?

Russ. He is right; Greek and slave are the same thing.

Per. Just heaven! How I deplore my poor countrymen!

Greek. They are not so deplorable as you imagine; for my part I was well enough content with my situation; I cultivated a little plat of land which the Pacha of Romella had the goodness to give me; and for which I paid a tribute to his highness.

Per.

Per. A tribute! This is a strange word in the mouth of a Greek; but tell me in what consisted this humiliating mark of servitude?

Greek. To give up part of the fruits of my labour, the eldest of my sons, and the most beautiful of my daughters.

Per. How! degenerate man, didst thou deliver up thine own children to slavery? Were the cotemporaries of Miltiades, Aristides or Themistocles——

Greek. These are names I never heard pronounced in my life. Were these people bostangis, capigi bachas, or bachas of three tails?

Per. to the Russ. What are these ridiculous and barbarous titles that offend my ears? I have doubtless addressed myself to some gross Bœotian, or weak Spartan. (*To the Greek.*) You doubtless have heard mention of Pericles.

Greek. Of Pericles. No; not at all——but stay——Is not that the name of a famous hermit?

Per. What is a hermit? Is he the first person in the state?

Greek. Good! These people have nothing in common with the state, nor the state with them.

Per. By what means then did this hermit become famous? Has he, like me, gained battles, and made conquests for his country? Has he erected great monuments to the gods, or formed some useful establishments for the public? Has he protected the arts and encouraged merit?

Greek. No; the man I was going to mention, could neither write nor read, he dwelt in a cottage and lived only on roots. The first thing he did in a morning was to tear his shoulders by the strokes of a whip; he offered to God his flagellations, his watching, his fasting and his ignorance.

Per. And you think the reputation of this monk equal to mine?

Greek. Certainly; we Greeks revere his memory as much as that of any man whatsoever.

Per.

Per. Oh destiny!—But tell me, is not my memory still held in veneration among the Athenians in that city into which I introduced magnificence and good taste?

Greek. I cannot inform you concerning that. I dwelt in a place called Setines, it is a poor miserable village which is falling into ruins, but which I have been informed was once a magnificent city.

Per. So you know as little of this superb and famous town, than of the names of Themistocles and Pericles! You must have lived in some subterraneous place or unknown quarter of Greece.

Ruff. Not at all; he lived at Athens itself.

Per. How! Did he live at Athens and knows it not? He does not even know the name of this famous town.

Ruff. Thousands of men live actually in Athens, and know it no more than him. This city once so opulent and stately, is now no more than a poor and dirty town called Setines.

Per. May I believe what you tell me?

Ruff. Such are the effects of the ravages of time, and the inundations of barbarians still more destructive than time itself.

Per. I know very well that the successors of Alexander the Great subjugated Greece; but did not Rome restore it to liberty? I dare not carry my enquiries farther, for fear of hearing that my country has fallen into slavery.

Ruff. Since that time she has often changed masters. At a certain time Greece shared with Rome the empire of the world; an empire, which both their powers conjoined, were insufficient to preserve; but to speak only of Greece, she has successively been under the yoke of the French, the Venetians, and the Turks.

Per. These are three barbarous nations whose names I never heard before

Ruff. I perceive the ancient Greek in this language. All strangers were barbarians in your eyes, without excepting even the Egyptians to whom you owe the beginning of all your knowledge. I confess, that anciently the Turks knew no other art than to conquer, and at present

present scarcely more than how to preserve their conquests; but the Venetians, and especially the French, have equalled your Greeks in more than one respect, and exceed them in many others.

Per. This is a very fine portrait; but I fear some vanity enters into the composition. Tell me, my friend, are you not a Frenchman?

Ruff. Not at all. I am a Russian.

Per. The nations of the earth have certainly changed their names entirely since I have dwelt in the Elyfian fields: I have no more heard of the Russians than the French, the Venetians than the Turks. Yet the knowledge you appear to possess, makes me presume that your nation is very ancient. Is it not a branch of the Egyptians of whom you have just spoken so favourably?

Ruff. No: I know that nation only by your historians: for our nation is descended from the Scythians and Sarmates.

Per. Is it possible that a descendant of the Sarmates and Scythians should know more of the state of ancient Greece than a modern Greek does?

Ruff. It is almost fifty years since we first heard of the Egyptians, the Greeks and the Sarmates; one of our sovereigns being a man of genius formed the design of banishing ignorance from his estates; and the arts and sciences, academies and spectacles were seen to advance rapidly in consequence of that design. We have studied the history of all people, and our history has merited the attention of all people.

Per. I own that a prince requires only the courage and the will in order to effect these kinds of metamorphoses; but it is likewise too true that I have lost my time in vain; I hoped to render my name immortal, and I find it is already forgot in my own country.

Ruff. I can inform you for your comfort, that it is known in mine, which I am sure is a circumstance you did not expect.

Per. I allow it. Yet I cannot help regretting that the Athenians have forgot all I have done for them. Well then, I must comfort myself with Osiris, Minos, Lycurgus,

Lycurgus, Solon, and all the legislators and founders of empires, whose actions and maxims are like mine plunged in oblivion. I perceive that knowledge is a star that can enlighten only one part of the globe at once, but which throws its light necessarily on each. The day ceases at one nation in the instant it appears in another.

Cu-su and Kou; or, The Dialogue of Cu-su, the Disciple of CONFUTZEE, with the Prince Kou, Son of the King of Low, tributary to the CHINESE Emperor GENEVAN, 417 Years before our vulgar Era.

Translated into Latin by Father FAUQUET, formerly Ex-Jesuit.
The Manuscript is in the Vatican Library, No. 42759.

D I A L O G U E I.

Kou.

WHAT am I to understand when I am told to adore the heavens (Chang-ti)?

Cu-su. Not the material heaven which we see, for the heaven is nothing more than the air, and the air is composed of the exhalations of the earth. Now it would be very absurd to adore vapors.

Kou. I should not however be surprised; for it seems to me that men have been guilty of greater follies.

Cu-su. It is true; but you who are destined to govern ought to be wise.

Kou. There are many nations that adore the heaven and the planets.

Cu-su. The planets are only earth like ours. The moon, for example, might as well adore our sand and mud as we place ourselves on our knees before the sand and mud of the moon.

Kou. What do people mean when they say the heaven and earth; to mount to heaven, to be worthy of heaven.

Cu-su. They utter a great piece of folly; there is no heaven; every planet is environed with its atmosphere as
with

with a shell, and revolves in space about its sun. Every sun is the center of many planets, which revolve continually about him. There is neither high nor low, ascent nor descent. You are sensible, that if the inhabitants of the moon were to say, that to go to the earth is to ascend, that men ought to render themselves worthy of the earth, they would speak extravagances. In the same manner we pronounce words without meaning, when we say, we ought to render ourselves worthy of heaven: It is as if we were to say, we ought to render ourselves worthy of the constellation of the Dragon, or worthy of space.

Kou. I think I understand you: we ought only to adore the God who created heaven and earth

Cu-su. Doubtless. We ought to adore God alone. But when we say that he created heaven and earth, we piously use a very poor and mean expression. For if by heaven we understand the immensity of space in which God hath lighted up so many suns and caused so many worlds to revolve, it is much more ridiculous to say *heaven and earth*, than the mountains and a grain of sand. Our globe is infinitely less than a grain of sand in comparison to those millions of millions of universes in which we disappear. All that we can do is to join our feeble voices to those of numberless beings who give homage to God in the abyss of extension.

Kou. We are then deceived when we are informed that Fo descended to us from the fourth heaven and appeared in the form of a white elephant.

Cu-su. These are stories which the bonzes tell to old women and children. We ought to adore only the eternal author of all beings.

Kou. But how could one being produce another?

Cu-su. Observe that star: its distance is fifteen hundred thousand millions of *lis* from our globe. There issue from it rays, which make equal angles in each of your eyes; they make the same in the eyes of all animals; does not this shew a preconceived design? is not this law in itself admirable? Now, who but a workman can make a work? Who but a legislator can

make laws? There is therefore an eternal workman and legislator.

Kou. But who made this workman, and how is he made?

Cu-su. My prince, as I was walking yesterday near the vast palace, which the king your father built, I heard two crickets, the one of which said to the other, this is a wonderful edifice. Yes, replied the other, illustrious and great as I am, I must confess that a power yet greater than crickets has effected this prodigy: but I have no idea of that being: I see that it is, but I know not what it is.

Kou. I allow that you are a more intelligent cricket than me: and the most engaging quality I see in you is, that you do not pretend to know that which you are ignorant of.

D I A L O G U E II.

Cu-su.

YOU allow then that there is an all-powerful Being existing of himself, and supreme artizan of all nature.

Kou. Yes; but if he exists of himself nothing can limit him, he must then be every where. He exists then in all matter, in all the parts of myself.

Cu-su. Why not?

Kou. I must then myself be a part of the Deity.

Cu-su. This is not perhaps a consequence. This piece of glass is penetrated in all parts by the light; is it therefore light itself? it is only sand and no more; every thing is in God, without doubt, that which animates ought to be every where. God is not like the emperor of China who dwells in his palace and sends his orders by colao. Because he exists, it is necessary that his existence should fill all space and all his works; and since he is in you, it is a continual admonition to do nothing that may make you blush in his presence.

VOL. I.

Z

Kou.

Kou. What must be done in order to regard one's self without repugnance and without shame before the Supreme Being.

Cu-su. Be just.

Kou. And what else?

Cu-su. Be just.

Kou. But the sect of Lao-kium say, that there is neither just nor unjust, vice nor virtue.

Cu-su. Does the sect of Lao-kium say, that there is neither health nor sickness?

Kau. No: they do not propagate so manifest an error.

Cu-su. The error of thinking that there is neither health nor sickness of the soul is much greater and more shocking. They who have said that every thing is equal are monsters; is it equal to nourish one's child or dash it on the pavement? to assist one's mother or plunge a poignard in her bosom?

Kou. You make me shudder. I detest the sect of Lao-kium; but there are so many shades and varieties of just and unjust, that one is often at a loss. What man knows precisely that which is allowable and that which is denied? Who can with exactness fix the bounds of good and evil? What rule can you give me to distinguish them?

Cu-su. The rules of Confutzee, my master: Live so, as in dying you would wish to have lived, and treat your neighbour in the manner you wish him to treat you.

Kou. These maxims, I confess, ought to be the code of all mankind. But of what importance will it be to me when dying, to have lived well? What shall I gain? When this clock is destroyed, will it be happy to have denoted the hours well?

Cu-su. The clock neither has perception nor thought, it can have no remorse as you have, when you perceive yourself culpable.

Kou. But if after the commission of many crimes, I arrive at the state of having no remorse?

Cu-su. You ought then to be exterminated; and depend upon it that among men who hate oppression, there will be found those who will put you out of a situation of committing more crimes.

Kou.

Kou. So God, which is in them, will permit them to commit crimes after having permitted me.

Cu-su. God has given reason to be abused neither by you nor them; you will not only be miserable in this life by that abuse, but who has assured you that you will not be so in another?

Kou. And who has told you that there is another life?

Cu-su. In the uncertainty alone you ought to conduct yourself as if there was one.

Kou. But I am sure that there is none.

Cu-su. I defy you to prove it.

D I A L O G U E III.

Kou.

YOU press me, Cu-su. In order that I may be rewarded or punished when I am no more, it is necessary that something should subsist in me which is possessed of consciousness, and will think after my death. Now, as before my birth, no part of me had either sentiment or thought, why should any part think after my death? What can this incomprehensible part of myself be? Will the humming of the bee exist after the insect is destroyed? Can the vegetation of the plant subsist when the plant itself is no longer in the earth? Is not vegetation a word which is used to signify the inexplicable manner in which the Supreme Being has ordained that plants should draw in the juices of the earth? The soul in the same manner is a word invented to express feebly and obscurely the springs of our life. All animals move, and this power of moving is termed the active force; but there is no distinct being which is implied by the term. We have passions, memory, reason, which doubtless are not things apart, not beings existing in us, or little persons endued with particular or separate existence; but the words are generical, invented solely to fix our ideas. The soul, which signifies our memory, our reason, our passions, is then no more than a word.

What is it that causes motion in nature? 'Tis God. What is it that causes plants to vegetate? God. What is it that causes animal motion? God. What causes thought in man? God.

If the human soul were a little being or person shut up in the body, who directed our motions and ideas, would it not denote a want of power, and an artifice unworthy of the sovereign maker of the world? He would not therefore be capable of making automata which should themselves have the gift of motion and thought. You have taught me the Greek, you have made me read Homer, in which I find that Vulcan, a divine artist, made tripods, which of themselves went to the councils of the Gods; but this Vulcan would have appeared to me to be a miserable pretender, if he had concealed some of his boys in the bodies of these tripods, in order to give them an apparent self motion.

There are cold dreamers who have thought it a bright effort of the imagination, to suppose the planets to be moved by Genii, who pushed them continually forward; but God has not been reduced to this pitiful resource: in a word, why employ two moving powers in a work in which one is sufficient. You dare not deny that God has the power to animate the being we call matter, why then should he make use of a second being for that purpose.

Yet more, what is this soul you so liberally give to our body? Whence comes it, and when does it come? Must the Creator of the universe be continually upon the watch at the conjunction of the sexes, to remark attentively the moment in which the generating principle leaves the body of the man, and enters that of the woman, in order instantly to infuse a soul into the being that begins to be formed? And if this germ dies, what becomes of the soul? It has either been created to no purpose, or must wait another occasion.

This I must confess seems to be a strange employment for the governor of the world; and he must not only continually watch the copulation of the human species, but also that of all other animals; for they, like us, have
memory,

memory, ideas and passions: and if a soul is necessary for to form these sentiments, this memory, these ideas, these passions, God must be continually at work in forming souls for elephants, hogs, owls, fishes and bonzes.

What idea must I have of the architect of so many millions of worlds, who is obliged to make use of numberless invisible contrivances, and pins to keep his work from falling to pieces.

These are a very few of the reasons which induce me to doubt the existence of the soul.

Cu-su. You reason in earnest: and this virtuous opinion even if erroneous, cannot be displeasing to the Supreme Being. You may deceive yourself, but you are not desirous of doing it, and are therefore excusable. But you should reflect, that what you have proposed are only doubts, and that these doubts are mortifying. Admit of more agreeable probabilities; annihilation is shocking, wish then to live. You know that thought is not matter, you know that it has no relation to matter, why then is it so difficult for you to believe that God has placed in you a divine principle, which not being dissoluble cannot be subject to death? Can you presume to say it is impossible for you to have a soul? Doubtless no. And if it be possible, is it not very probable that you have one? Can you reject a system so beautiful and so necessary to the human race? Can a few difficulties prevent your accepting it?

Kou. I am desirous of embracing this system, but I wish to have it proved. I am not my own disposer, to believe without evidence, I have been always struck with the grand idea that God has made every thing, that he gives motion and life to all, and if he is in all the parts of my being, as he is in all the parts of nature, I see no need of supposing a soul. What is there for this little subaltern being to do, if I am animated by God himself, or what purpose does the soul answer? We have not given ourselves ideas, for we have them almost always without the mediation of the will; we have them in sleep; every thing is done in us without our interposition. The soul might say to the blood and animal

spirits: run, I beg you in this manner for my pleasure, yet they will all always circulate in the manner prescribed by God. I would rather be the machine of a God who is demonstrated to me, than of a soul whose existence is a matter of doubt.

Cu-su. Well then, if God himself animates you, be careful never to fully by crimes the God which is within you; and if he has given you a soul, be careful that that soul may not offend him. In either system you are possessed of a will; you are free; that is to say, you have the power of doing what you will, make use of this power to serve the God who has bestowed it on you. It is good that you should be a philosopher, but it is necessary you should be just. You will be still more so, if you believe yourself possessed of an immortal soul.

Be pleased to answer me. Is it not true that God is the sovereign justice?

Kou. Without doubt: and if it were possible that he should cease to be, (which it were blasphemy to suppose) I would myself act with equity.

Cu-su. Is it not true that it will be your duty to recompense virtuous and punish vicious actions when you are on the throne? Do you wish that God should not do that good which you think yourself under obligation to do? You know that he exists, and that in this life there will always be unhappy virtues and unpunished crimes; it is therefore necessary that good and evil should find their judgment in another life. This notion which is so simple, so natural, and so general, is that which has established among all nations the belief of the immortality of the soul, and of the divine justice which judges them, when they have left their mortal clothing. Is there a system more reasonable, more agreeable to the Divinity, or more useful to mankind?

Kou. Why then are there several nations who have not embraced this system? You know that we have in our province about two hundred families of the ancient Sinous*, who formerly inhabited part of Arabia Petræa;

* These are the Jews of the ten tribes, who at their dispersion penetrated as far as China; where they are called Sinous.

neither they nor their ancestors ever believed the soul immortal: they have their five books as we have our five kings. I have read the translation. Their laws which necessarily resemble those of all other people, command them to honour their parents, not to thief, nor lie, nor to be adulterers, nor homicides; but these laws speak neither of the rewards or punishments of another life.

Cu-su. If the idea is not yet developed among this poor people, it most assuredly will be developed at some future time. But of what consequence is a small unhappy nation to us, while the Babilonians, the Egyptians, the Indians, and all polished nations have admitted this salutary dogma? If you were sick would you reject a remedy approved by all the Chinese, on the pretence that some barbarians of the mountains had not chosen to use it? God has given you reason which informs you that the soul ought to be immortal, it is therefore God himself who informs you.

Kou. But how can I be recompensed or punished when I shall no longer be myself, when I shall no longer have any thing of that in which my personality consisted? It is only by my memory that I am always the same. I lost my memory in my last sickness; a miracle will therefore be necessary to restore it and make me re-enter into the existence I had lost.

Cu-su. That is to say, if a prince had murdered his family to come at the throne, and tyrannized over his subjects, he would be quit of punishment by saying to God, it is not me, I have lost my memory, you mistake, I am no longer the same person; do you think that God would admit this sophism?

Kou. Be it so then*, I give up the argument. I wished to do good for my own sake, I will do it also

* Ye gloomy enemies of reason and truth, will you still affirm that this work teaches the mortality of the soul? This passage has been printed in all the editions; with what face then can you dare to calumniate it? Alas! if your minds preserve their character thro' all eternity, they must for ever be very stupid and very unjust. No, the authors of this reasonable and useful work do not tell you, that the soul dies with the body; they only tell you that you are ignorant.

for the sake of the Supreme Being. I thought it sufficient that my soul should be just in this life, I will hope that it shall be happy in another. I see that this opinion is for the advantage both of the prince and people; but am embarrassed about the worship of God.



D I A L O G U E IV.

Cu-ju.

WHAT difficulty do you find in our Chu-king, this first canonical book so respected by all the Chinese emperors? You cultivate a piece of ground with your royal hand in order to give the example to the people, and you offer the first fruits to Chang-ti, to Tien the Supreme Being. You sacrifice to him four times in the year; you are king and pontiff, you promise to God to do all the good in your power. Is there any thing in this that is repugnant to your ideas of propriety?

Kou. I am far from objecting to this; I know that God has no need of our sacrifices, nor of our prayers, but we have occasion to make them to him; his worship

rant. Do not blush at this; all wise men have confessed their ignorance, no one has been rash enough to affirm he knew any thing of the nature of the soul. Gassendi, in summing up what he has said concerning antiquity, speaks thus to you; *You know that you think, but you are ignorant what kind of substance you are; you who think. You resemble a blind man, who feeling the heat of the sun, believes he has a distinct idea of that luminary.* Read the rest of this amiable letter to Descartes, read Locke; re-read this work with attention, and you will see that it is impossible we should have the least notion of the nature of the soul, because it is impossible the creature should know the secret springs of action in the Creator; you will see that without knowing the principle of thought, we ought to endeavor to think with propriety and justice; that we ought to be every thing which you are not, modest, mild, benevolent, indulgent, resembling Cu fu and Kou, and not Thomas Aquinas or Scotus, whose souls were unenlightened, or Calvin and Luther, whose minds were harsh and obdurate. Endeavour to obtain a little of our disposition, and you will look back with contempt on your former selves. V.

is established not for him but for us. I am very desirous of praying, but especially with my prayers not to be ridiculous, for when I shall have cried as oft as I please, *that the mountain of Chang-ti is a fruitful mountain, and that we ought not to regard fruitful mountains*, when I shall have put the sun to flight and dried up the moon, will this nonsense be agreeable to the Supreme Being, useful to my subjects and myself?

I am more particularly offended with the madness of the sects with which we are surrounded. On the one side I behold Laotzé whom his mother conceived by union of heaven and earth, and with whom she was pregnant eighty years. I have no more faith in the universal annihilation and destruction than in the white hair with which he was born, and the black cow on which he mounted when he went forth to preach his doctrines.

I give no more credit to the god Fo, tho' he had a white elephant for his father, and promises immortal life to his disciples.

That which displeases me the most of all is, that such reveries as these are continually preached by the bonzes who seduce the people in order to govern them; they make themselves respectable by mortifications which are shocking to nature. Some of them deprive themselves of the most salutary foods during life, as if God were not to be pleased but by a bad regimen. Others put their necks into the coccan or malefactor's collar of which they are worthy sometimes; they drive nails into their thighs as if they were planks, and the people follow them in crouds. If a king puts forth an edict which displeases them, they coolly reply, that the edict is not to be found in the Commentaries of the god Fo, and that god is to be obeyed rather than man. How is this popular disease to be remedied which is at once so extravagant and so dangerous? You know that toleration is the principle of the Chinese government and all Asia; but is not this toleration a thing to be deplored when it exposes an empire to the danger of being overturned on account of fanatical opinions?

Cu-su.

Cu-su. Chang-ti preserve me from wishing to extinguish in you that spirit of toleration, this virtue so respectable, which is to the mind what the permission to eat is to the body. The law of nature permits every one to believe what he will as well as to support himself by the nourishment he chuses. A physician has no right to kill his patients because they have not observed the regimen he prescribed. A prince has no right to kill such of his subjects as do not think like himself; but he has a right to prevent disturbances, and if he is wise, he will find it easy to root out superstition. You know what happened to Daon the sixth king of Chaldea, some four thousand years ago.

Kou. No: you will do me a pleasure by informing me.

Cu-su. The Chaldean priests thought proper to adore the pike of Euphrates. They pretended that a famous pike named Oannes had formerly taught them theology, that this pike was immortal, was three feet in length and had a little crescent on his tail. It was out of respect for this Oannes that they had prohibited the eating of pike. A great dispute arose among the theologians to determine whether the pike Oannes had a hard or soft roe. The two sects reciprocally excommunicated each other, and frequently proceeded to open violence. This was the method which king Daon adopted to put an end to the dispute.

He commanded a strict fast of three days to be kept by both parties; after which he caused the sect of the hard roes to be present at his dinner; where a pike of three feet long, to whose tail a little crescent was fixed, was served up. Is this your god? demanded he of the doctors. Yes, sire, replied they, for he has a crescent on his tail. The king commanded the pike to be opened, and it was found to have the finest soft roe in the world. You see clearly, said he, that this is not your god since he has a soft roe. Whereupon the pike was eaten by the king and Satrapes, to the great satisfaction of the hard roe theologians who saw the god of their adversaries fried,

After

After this the doctors of the adverse party were sent for. A god of the same length but hard roed, and with a crescent on his tail was shewn to them, which they immediately affirmed to be the god Oannes, and that he was soft roed: he was fried like the other and found to be hard roed. Both parties being thus fools alike, and equally hungry, the good king informed them, that he had nothing but pike to give them for dinner; these they greedily devoured without enquiring whether they were hard or soft roed. The civil war was thus terminated; every one blessed the good king Daon, and the citizens since that time have had pike for their dinner, as often as they thought proper.

Kou. I admire king Daon and promise to imitate him the first occasion that shall offer. I shall always prevent, as much as I can without doing violence to any one, the people from adoring Fo, or pike.

I know that in Pegu and Tonquin there are little gods and little talapoins, who in their discourses make the moon to descend and predict future events clearly, that is to say, who clearly see that which does not exist, for the future does not exist. I will prevent as much as I can the talapoins from coming into my kingdom to take the future for the present, and to cause the moon to descend.

What pity it is that there should be sects who go from town to town to deal out their reveries, like quacks who sell their drugs! What a disgrace it is for the human mind that little nations should think that truth is for them only, and that the vast empire of China is delivered to error! Is the eternal Being, the god of Formosa or of Borneo only? Will he abandon the rest of the universe? My dear Cu-fu, he is the father of all men; he allows them all to eat pike; the best homage and the most worthy of him is to be virtuous; a pure heart is the most beautiful of all his temples, as the great emperor Hiao hath said.

D I A L O G U E V.

Cu-fu.

SINCE you love virtue, in what manner will you practice it when you become king?

Kou. In being unjust neither to my neighbours nor my people.

Cu-fu. To refrain from evil is not sufficient: you must do good; you must support the people by employing them in useful works and not by endowing indolence. You should embellish public places, dig canals, build edifices, encourage all the arts, you should recompense merit in every department and pardon involuntary faults.

Kou. This is what I call not to be unjust for there are so many duties.

Cu-fu. You think like a king; but there is the king and the man, the public and the private life. You will marry soon, how many wives do you think to have.

Kou. I think a dozen will be sufficient; a greater number might consume too much of the time which ought to be appropriated to business. I do not approve of those kings who have three hundred wives, seven hundred concubines, and thousands of Eunuchs to watch them. The madness of making eunuchs appears to me the greatest outrage that can be committed to humanity. I can hardly pardon the castration of cocks, though it makes them better for eating; but eunuchs have not yet been put to the spit. What purpose does their mutilation answer? The Delai lama has fifty to sing in his pagoda. I would wish to know if Chang-ti is much pleased to hear the shrill voices of these fifty geldings.

I find it likewise very ridiculous that there are bonzes who do not marry; they pretend to be wiser than the other Chinese; why do not they beget wise children? This is a ridiculous mode of honoring Chang-ti, by depriving him of adorers! and as singular a method of serving mankind by giving an example that tends to annihilate

nihilate the race. The good lama, named* Stelca Ifant Erepî, said, that every priest ought to beget as many infants as he could; he preached by example, and was very useful in his time. For my part, I will marry all the lamas and bonzes, and lameffes and bonseffes who have a vocation to this holy work; they will certainly be better citizens, and I shall think myself doing a great piece of service to the kingdom of Low.

Cu-su. O the good prince we shall have! you make me weep with joy. But you will not place your whole satisfaction in your wives and your subjects. The whole day cannot be consumed in producing edicts and infants, you will doubtless have some friends?

Kou. I am already possessed of good friends, who tell me my faults, and, in return, I point out theirs; they console me, and I return the same good office. Friendship is the balm of life, greater than that of the chymist Erueil, or even the parcels of the great Hanouard. I am surprised that friendship is not a precept in our religion, and am desirous of inserting it in our ritual.

Cu-su. Take care of that; friendship is sacred of itself; never command it, the heart ought to be free; and if you make friendship a precept, a mystery, a rite, a ceremony, there will be a thousand bonzes who, in preaching and writing these reveries, will render it ridiculous; it ought not to be exposed to this profanation.

But how will you act with regard to your enemies? Confutzee commands us in twenty places to love them. Does not that seem rather difficult?

Kou. Love one's enemies! My God! why nothing is so common.

Cu-su. How do you mean?

Kou. As I apprehend I ought to mean. I learned the art of war under the Prince of † Décon, against the Prince

* Stelca Ifant Erepî, in Chinese, signifies l'Abbé Castel de St. Pierre. V. (It is an anagram. N.)

† It is remarkable, that by transposing the letters of the Chinese names Décon and Vis-brunk, we form Conde and Brunswick, so celebrated are great men in every part of the earth. V.

of Vis-brunk. When one of our enemies was wounded and fell into our hands, we took care of him as a brother; we have often given our own beds to our wounded prisoners, and have laid by them on tyger's skins spread on the earth; we have ourselves attended on them, what more do you wish? must we love them as we do our mistresses?

Cu-su. I am very much edified with every thing you say, and I wish all nations heard you. For I am informed that there are people who are silly enough to affirm, that we are ignorant of true virtue, that our good actions are only shining sins, and that we have need of lessons from their talapoins in order to become possessed of good principles. Alas the unhappy creatures! It is but yesterday they learned to write and read, and they pretend to teach their masters.

D I A L O G U E. VI.

Cu-su.

I Shall not repeat to you the common place maxims which have obtained among us for five or six thousand years on all the virtues. There are some which relate only to ourselves, as prudence to conduct our minds, temperance to govern our bodies; these give the precepts of politics and health. The true virtues are those which are useful to society; as, fidelity, magnanimity, benevolence, toleration, &c. Thank heaven there is not an old woman among us who does not teach all these virtues to her little children; they are the rudiments of education for our infants in the village as well as in the city; but there is a great virtue which begins to be out of use, and I am sorry for it.

Kou. What is it? let me know immediately; I will endeavour to revive it.

Cu-su. It is hospitality; this virtue so social, this sacred bond of mankind begins to be weakened since we first had taverns. This pernicious institution came, they say, from certain savages of the west. These wretches
appa-

apparently have no house to receive travellers. What pleasure it must be to receive in the grand city of Low, in the beautiful place Honchan, in my house Ki, a generous stranger who arrives from Samarcande, to whom I, from that moment, became sacred, and who is obliged, by all the laws divine and human, to become my intimate friend and to receive me into his house when I travel into Tartary.

The savages I speak of do not receive strangers into these disgusting cottages but for money, they sell this infamous accommodation dearly, and yet not withstanding these poor creatures think themselves above us, and boast that their morals are purer. They pretend that their preachers exceed Congfutzée, and in short that it is for them to teach us justice, because they sell bad wines on the highway, because their women walk in the street like fools, and dance while ours cultivate the silk worms.

Kou. I approve very much of hospitality and delight in the practice, but I fear the abuse. There are people near the great Thibet who are very ill accommodated, who love to run about and travel for no purpose whatsoever; and when you were to go to grand Thibet to enjoy with them the rights of hospitality, you would find neither a bed nor a pot on the fire; this might disgust your politeness.

Cu-su. The inconvenience is small and easily remedied by receiving those only who are well recommended. There is no virtue without its dangers. And it is commendable to embrace them on that account.

How divinely wise was our Congfutzée? there is no virtue but he inspires! The happiness of mankind is attached to his sentences! Here is one that comes to my mind; it is the fifty third.

Return benefits by benefits, and never revenge injuries.

What maxim, what law could the people of the west place in opposition to such pure morality? In how many places does Congfutzée recommend humility? If this

virture were practised there would be no quarrels on earth.

Kou. I have read all that Congfutzée and the sages of earlier times have written on humility, but it seems to me that they have never given a definition sufficiently exact: there is perhaps little humility in presuming to correct them; but I have at least the humility to confess I do not understand them. Tell me your opinion.

Cu-su. I will humbly obey you. I take humility to be the modesty of the soul, for exterior modesty is only civility. Humility cannot consist in denying the superiority which one may have acquired over another. A good physician cannot dissemble that his knowledge is superior to that of his patient who is in a delirium. The teacher of astronomy ought to confess that he is more learned than his disciples; he cannot avoid believing it, and is under no obligation to persuade himself to the contrary. Humility does not consist in being abject. It is the corrector of self-love, as modesty is the corrector of pride.

Kou. Well then, it is in the exercise of all these virtues and in the worship of one universal God, that I wish to live, far from the chimeras of sophists and the illusions of false prophets. The love of my neighbour shall be my virtue on the throne, and the love of God my religion. I shall despise the god Fo, Laotzee, and Vistnou, who has been so many times incarnated among the Indians; and Sammonocodom who descended from heaven to play at quoits with the Siamese and the Camis, who came to Japan from the moon.

Unhappy must that people be which is so weak and barbarous as to suppose that there is a God for their province alone; it is blasphemy. What! does the sun shine to all, and the light of God illuminate only a small and mean nation in a corner of the earth? How horrible and foolish! The Divine Being speaks to the hearts of all men and the bonds of charity ought to unite them from one end of the universe to the other.

Cu-su. O wise Kou! You have spoken like a man inspired by Chang-ti himself; you will be a worthy prince. I have been your instructor but you are become mine.

ARISTON and THEOTIMUS.

Ariston.

WELL then, my dear Theotimus, you are going to be a curate in the country?

The. Yes; I am appointed to a small parish, and I prefer it to a larger, I have but a limited portion of intelligence and activity. I certainly could not direct seventy thousand souls, and have always admired the confidence of those who have taken charge of such immense districts. I feel myself incapable of such an administration; a large troop affrights me, but I may do some good with a smaller. I have studied jurisprudence enough to prevent as much as in my power, my poor parishioners from ruining themselves by law-suits. I have knowledge enough of agriculture to give them useful advice occasionally. The lord of the place and his wife are people of merit and no bigots. They will assist me in doing good. I flatter myself that I shall live happily enough, and that I shall cause unhappiness to no one.

Aris. Are not you concerned to be without a wife; it would be a great comfort to you; how pleasing would it be after having preached, confessed, communicated, baptised, buried, to find yourself at home with a mild agreeable and virtuous woman; to take care of your linen and your person, who enlivened you in health, attended you in sickness, and brought you fine children, who with good education would be useful to the state. I regret that you whose life is devoted to the service of men should want so necessary a comfort.

The. The Greek church has been careful to encourage marriage among its divines. The English and protestant churches have the same wisdom; but the wisdom of the Latin church is contrary to these, and must be submitted to. Perhaps at present, now the spirit of philosophy has made so great a progress, a council may make laws more favourable to humanity than the council of Trent, but in the mean-while I must conform to pre-

sent laws; it will require an effort, I am conscious, but so many better than me have submitted to it that I ought not to murmur.

Arist. You are learned and your eloquence is of that kind; how do you intend to preach before the country people.

The. In the same manner as I should preach before kings; I would always speak of morality, and never of controversy. God forbid that I should attempt to dive into concomitant grace, affective grace, grace which is resisted, sufficient grace that is insufficient; to examine whether the angels which eat with Abraham and Lot had bodies or only seemed to eat. There are a thousand things which neither I nor my congregation would understand. I shall endeavour to be a good man, and to make others so; but I shall make no theologians, and be as little of a theologian myself as I can.

Arist. O the good curate! I should like to have a country house in your parish. Tell me, I beseech you, how you will conduct yourself with regard to confession.

The. Confession is an excellent thing, a bridle to crimes, invented in the most early antiquity. Confession was used in the celebration of all the ancient mysteries; we have united and sanctified this wise practice; it is very good to make hearts that are ulcerated with hatred, forgive, and to make thieves restore what they have filched from their neighbours. It has some inconveniences. There are many indiscreet confessors, especially among the monks, who sometimes teach the girls more foolish tricks than all the youths in the village could. Details are improper in confession, it is not a judicial interrogation but an acknowledgment of sins, which one sinner makes to God in the presence of another, who, in his turn, accuses himself. This salutary confession is not made to gratify the curiosity of men.

Arist. And as to excommunications, would you make use of them?

The. No; there are rituals which excommunicate locusts, sorcerers and comedians. I shall not prohibit the entrance of the church to locusts as long as it remains

remains improbable that they will ever come there. Sorcerers I shall not excommunicate, there being no such people, and as to comedians since they are pensioned by the king and authorised by the magistrate I shall be careful how I defame them, I confess even to you as a friend; that I am an admirer of comedy when it does not clash with good manners. I passionately admire the *Misanthrope*, *Athalie* and other pieces which appear to me the schools of virtue and propriety of behaviour. The lord of my Village causes some of these pieces to be play'd at his seat, by young people who have talents; these representations inspire virtue by the allurements of pleasure, they form the taste and they teach pronounciation and speaking. I see nothing in this but what is very innocent and even useful; I am very glad to be present at these spectacles for my own instruction but in a close box that I may give no scandal to the weak.

Aris. The more you discover your sentiments the more desirous I am of being your parishioner. There is one very important circumstance which embarrasses me. How will you prevent the country people from getting drunk on holidays? That is their grand manner of celebrating them. You see some overwhelmed with the liquid poison, the head reclined towards the knees, the hands pendant, seeing nothing, hearing nothing, reduced to a state far beneath the brutes, these you see carried home to their distressed wives, incapable of working the next day, and often sick and sottish for the remainder of their lives. Again you see others become furious by the wine, raise bloody quarrels, beat each other, and sometimes finish, by murder, these shocking scenes which are the disgrace of humanity; it must be allowed that the state loses more subjects by these debauches than in battle. How will you diminish so execrable an abuse in your parish?

The. My determination is made: I will allow them, and even persuade them to cultivate their fields on holidays after divine service, which I shall take care to finish early. It is the want of employ on the holiday which

leads them to the public house, working days are not the days of debauch and murder. Moderate labour contributes to the health both of body and soul: and yet more, this labor is necessary to the state. Let us suppose five millions of men who one with another make ten-pence a day by their work, which is a very moderate estimation; you make these five millions of men idle thirty days in the year. The state therefore loses work to the value of thirty times five millions of pieces of money, value ten-pence each. Now certainly God has neither commanded this loss nor this drunkenness.

Arif. Thus then it is that you reconcile prayer and labor. God commands both. You serve God and your neighbour.—But in the ecclesiastical disputes which party will you take.

The. Neither. Disputes never arise concerning virtue because it comes from God; they always relate to the opinion of men.

Arif. O the good curate! the good curate!

An INDIAN and a JAPANESE.

Indian.

IS it true that the Japanese were formerly unskilled in cookery, and submitted their kingdom to the grand lama, that this grand lama decided as sovereign in all matters of eating and drinking, that he sent from time to time among you a little lama who came to collect the tributes in exchange for which he gave a token of protection made with the two forefingers and the thumb.

Jap. Alas! nothing is more true. Imagine to yourself that all the places of the canusi* who are the grand cooks of our island, were in the gift of the lama, and were not given for the love of God. Besides, every house of our seculars paid annually an ounce of silver to the grand cook of Thibet: and all we got in return were a few ill tasted dishes which were termed *relicts*.

* The canusi are the ancient priests of Japan.

An

And when he became possessed of any new fancy, such as to make war on the people of Tangut he raised new subsidies among us. Our nation frequently complained but without redress; every complaint was on the contrary followed with some additional burthen. At length love, which does every thing for the best, delivered us from this servitude. One of our emperors quarrelled with the grand lama on account of a woman; but it must be confessed that they who most helped us were our canusi, otherwise pauxcospie;† it is to them we are obliged for throwing off the yoke, which thus happened.

The grand lama had the ridiculous madness of believing himself always in the right: our dairi and canusi wished likewise to be in the right sometimes. The grand lama pronounced their pretension to be absurd: they would not recede in the least from it, and therefore broke with him for ever.

Ind. Well, you have doubtless been happy and tranquil since that time?

Jap. Not at all. We have persecuted, devoured, and tore each other to pieces for near two ages. Our canusi in vain wished to be in the right, it is but a century since they began to be reasonable. Since which time we may boldly affirm ourselves to be one of the happiest nations on the earth.

Ind. How can you enjoy so great an advantage if it be true that you have a dozen factions of cookery in your kingdom? you ought to have a dozen civil wars in a year.

Jap. Why so? There are a dozen cooks who have each a different bill of fare, must we cut one another's throats instead of going to dinner? on the contrary, every one will regale himself with the cook he likes best.

Ind. It is true, that we ought not to dispute about tastes, but this rule is not adhered to, and people grow warm and quarrel.

Jap. After disputing a long time, and it was seen that these quarrels had no other effect than to produce

† Pauxcospie; anagram of episcopaux (bishops).

mischief: the maxim of mutual toleration was adopted, and is without controversy the best that can be done.

Ind. And who, pray, are the cooks among whom your nation is divided?

Jap. The first are the Breuxch *, who will never give you either black puddings or pork, they are attached to the ancient cookery, they would rather die than lard a pullet. They are great calculators, and if there be an ounce of silver to be divided among them and the eleven other cooks, they take half for themselves, and leave the rest to those who best know how to count it.

Ind. I believe you'll hardly sup with those gentry.

Jap. No: the next are the Pispates, who, on certain days in every week, and even during a considerable part of the year, prefer feeding on an hundred crowns worth of turbot, trouts, soles, salmons, sturgeons, than on a fricassée of veal that might be had for a groat.

For our part, we are great admirers of beef, and a certain dish called a pudding, and as to the rest, all the world agrees that our cooks are infinitely superior to the Pispates. No people are more profound than we in the garum of the ancient Romans, or better acquainted with the onions of ancient Egypt, the paste of locusts of the early Arabs, or the horse flesh of the Tartars; there is always something new to be learned in the books of the canusi, commonly called pauxcospie.

I shall not here mention those who do not eat, but at Terluh, nor those who adopt only the regimen of vincal, nor the baptistans, nor others; but the quakers require a particular attention. They are the only ones whom I never observed to drink and swear. They are very difficult to impose upon, but they will never impose upon you. It seems as if the law of loving one's neighbour as one's self was made only for those people; for in truth, how can a good Japanese pretend to love his neighbour as himself, when, for a small sum of money, he lodges a bullet in his head, or slashes him with a kris

* It is plain that Breuxch are the Hebreux (Hebrews) and so of the rest. V.

or cutlafs four fingers broad: he at the ſame time expoſes himſelf to be ſhot, or to have his throat cut; ſo that we may with much more propriety ſay, he hates his neighbour as himſelf. The quakers have never had this frenzy; they ſay that mankind are veſſels of clay formed to laſt a very ſhort time, and that it does not become them in the gaiety of their heart, to claſh and break themſelves againſt each other.

I confeſs to you, that if I were not a canuſi I ſhould have little objection to being a quaker. You muſt allow that there is no quarrelling among ſuch peaceable cooks. There are a great number of others who call themſelves deiſts; theſe give dinners to all the world indifferently, and you are free with them to eat every thing you pleaſe, larded or unlarded, with eggs or with oil; partridges, ſalmon, white wine, red wine, all is indifferent, provided you make a ſhort prayer to God before or after dinner, and you are upright and honeſt; they will laugh with you at the expence of the grand lama, which does him no harm, or at the expence of Terluſh, Vineal, Memmon, &c. it is only proper that our deiſts muſt allow that our canuſi are very dexterous at cookery, and eſpecially that they ſay nothing of retrenching our incomes; in this caſe we live very peaceably together.

Ind. But after all, there ought to be a reigning cookery, the king's kitchen.

Jap. True: but when the king of Japan has made good cheer and ſatisfied himſelf, he ought to be in a good temper, and not diſturb the digeſtion of his ſubjects.

Ind. But if raſh and obſtinate people reſolve to eat ſauſages under the king's noſe, though they know he has an averſion to them, if they aſſemble to the number of four or five thouſand, armed with gridirons to cook their ſauſages, if they inſult theſe who do not eat—

Jap. They muſt then be puniſhed as drunkards who diſturb the peace of their neighbours. We have provided againſt this danger. None but thoſe who follow the king's cookery are capable of the dignities of the ſtate. All others may dine according to their fancy,

but

but are excluded from public offices. Moles are particularly forbidden and punished immediately; all quarrels at table are carefully repressed according to the precept of our great Japanese, who has written in the sacred language, *suti, rako. cus, flac, natis in usum lætitiæ scipbis pugnare tracum est*; which implies, Dinner is intended for a modest and polite pleasure, and not for the purpose of throwing the glasses at each others heads.

By the help of these maxims we live happily; our liberty is founded on our *taicosema*, our riches increase; we have two hundred junks of the line, and are the terror of our neighbours.

Ind. Why then did the excellent poet Recina*, son of the Indian poet Recina, so tender, so accurate, so harmonious, so eloquent, why has he said in a didactic work in verse, intitled *Grace*, and not the *Graces*?

Japan, where once the purest light shone forth,
Is now the land of visionary fools.

Jap. The Recina you speak of is himself a great visionary. Can this poor Indian be ignorant that we have taught him what is the nature of light? That if the true course of the planets be at present known in India, it is owing to us? That we alone have taught men the primitive laws of nature, and the calculation of infinites? That if we descend to more common things, his countrymen learned to build junks from us in mathematical proportions? That they even owe to us the stockings with which their legs are covered? Is it possible that after having invented so many admirable or useful things we should be fools? And that a man who has put the dreams of others into verse, should be the only sage? Let him leave us to our cookery, and make verse if he pleases, on more poetical subjects†.

* Recina, probably Louis Racine, son of the admirable Racine.

† N. B. This Indian Recina on the faith of the dreamers of his country, believed that good sauces could not be made, but when brama by a peculiar will taught the method to his favourites, that there were an infinite number of cooks to whom it was impossible to make a ragout by the firm will of succeeding, and that brama deprived

Ind. What do you require? He had the prejudices of his party, of his country, and of himself.

Jap. This set of prejudices is much too numerous.

TUCTAN and KARPOS; or, a Dialogue between the
Bacha TUCTAN, and the Gardener KARPOS.

Tuctan.

WELL! friend Karpos, you sell this garden stuff very dear, but it is good—Pray what is your religion at present?

Karpos. Upon my word, my bacha, I shall find it difficult to tell you. When our little island of Samos belonged to the Greeks, I remember they made me say that the Agion Pneuma was produced only from the Tou Patrou; they made me pray to God on my knees, with my hands crossed, and forbade me to eat milk in lent. The Venetians came next, and my Venetian curate made me say, that Agion Pneuma came from Tou Patrou, and Touyou allowed me milk, and made me pray to God on my knees. Then came the Greeks again and expelled the Venetians, and I was compelled to renounce Touyou and cream. You at last have driven out the Greeks and I hear you cry allah, illah, allah, with all your might; I do not know perfectly what religion I am of. I love God with all my heart, and sell my greens very reasonably.

Tuctan. Those are fine figs.

Karpos. My bacha, they are at your service.

Tuctan. I am told that you have likewise a fine daughter.

Karpos. Yes, my bacha, but she is not at your service.

Tuctan. Why so? Wretch.

prived them of the means out of pure malice. This silly notion is not believed at Japan, where the following sentence is held as an incontestable truth. God never acts by partial will, but by general laws. V.

Karpos.

Karpos. Because I am an honest man. It is allowable for me to sell my figs, but not to sell my daughter.

Tuclan. And by what law is it forbid to sell this last fruit?

Karpos. By the laws of all honest gardeners; the honour of my daughter is not mine but her own, and is no merchandize.

Tuclan. You are not then faithful to your bacha.

Karpos. Very faithful in just things so long as you are my master.

Tuclan. But if your Greek papa were to make a conspiracy against me, and command you on the behalf of Toupatrou and Touyou to engage in the plot, would not you have devotion enough to obey?

Karpos. Me! not at all. I would take particular care to avoid it.

Tuclan. And why would you refuse to obey your Greek papa in so happy an occasion?

Karpos. Because I have sworn obedience to you, and know very well that the Taupatrou does not command conspiracies.

Tuclan. I am glad of that. But if the Greeks should happen to recover the island and drive me out, would you continue faithful to me?

Karpos. How should I continue faithful to you when you would no longer be my bacha?

Tuclan. And what would become of your oath to me?

Karpos. It would be like my figs, you would have not more concern with either. Is it not true, (to speak with respect) that if you were to die this instant I should no longer owe you any thing.

Tuclan. The supposition is uncivil but the thing is true.

Karpos. Well then, if you were driven out, it is the same as if you were dead, and you would have a successor to whom I should make another oath. Could you require a fidelity of me which would be of no service to yourself? It is as if not being able to eat my figs, you were to prevent my selling them to others.

Tuclan.

Tuſtan. You are a reaſoner. You conſequently have principles.

Karpos. Yes, after my faſhion. They are few but they ſerve my purpoſe, and if I had more they would only ſerve to embarras me.

Tuſtan. I ſhould be curious to know them.

Karpos. They are, for example, to be a good huſband, father, neighbour, ſubject and gardener; this is my whole aim, and I hope God will be merciful to me.

Tuſtan. And do you think he will have mercy on me who am governor of this iſland.

Karpos. And how would you have me know? Is it for me to determine how God will deal with the bachas? It is an affair between you and him, and I do not meddle or interfere in it. All I imagine is that if you are as honeſt a bacha as I am a gardener, God will uſe you very well.

Tuſtan. By Mahomet, I like this infidel very well. Adieu my friend, Allah take you into his holy protection.

Karpos. I thank you. Theos have pity on you, my bacha.

The laſt Words of EPICTETUS to his SON.

Epiſtetus.

I AM dying: I expect a tender remembrance from you and not uſeleſs tears: I die content ſince I leave you virtuous.

Son. You have taught me to be ſo. But you know the trouble that agitates me. A new ſect in Paleſtine endeavours to produce remorse in my breaſt.

Epic. Remorſe! Remorſe is only for the wicked. Your hands and your ſoul are pure. I have taught you virtue and you have practiſed it.

Son. Yes, but this new ſect teaches a virtue with which I am unacquainted.

Epic. What is this ſect?

Son.

Son. It is composed of Jews who sell old clothes and philters, and who clip and file the money at Rome.

Epic. The virtue they teach is apparently false money.

Son. They say it is impossible to be virtuous without cutting off a part of the prepuce or being plunged in the water in the name of the Father and the Son. It is true, they are not perfectly agreed. Some chuse to retain the prepuce, others do not. Some believe the water to be necessary, as Pindar says, wonderfully: others reject it. But all say that it is necessary to give them money.

Epic. How money? Without doubt we ought with our superfluity to help the poor who cannot work, pay those who can gain their livelihood and partake with one's friends.

Son. The philosophers of whom I speak, require quite other things. They demand you to lay all you have at their feet even to the last farthing.

Epic. If so they are robbers and you ought to carry them to the pretor and centumvirs.

Son. O no! they are merchants who give you the best purchase in the world for your money; for they promise you eternal life. And if in laying your money at their feet you keep only a small part to prevent starving they have the power of causing you to die suddenly.

Epic. They are then assassins of whom society ought to be purged without delay.

Son. No; they are magi, who have admirable secrets, and can kill by words. The Father they say, has given them this power thro' the Son. One of their profelytes who stinks horribly, but who preaches in barns with great success, told me yesterday that one of their friends named Ananiah having sold his possessions to please the Son in the name of the Father, laid the money at the feet of one of the magi named Barjona, but having secreted a part to purchase necessaries for his little infant, he was punished with death on the spot. His wife

wife came after and Barjona killed her with a single word.

Epic. My son this is an abominable sect. If the thing were true they would be the most abominable criminals on the face of the earth. You have been told ridiculous stories; you are a well disposed child, but I am concerned lest you should be weak.

Son. But, my father, if eternal life be gained by giving all one's effects to Simon Barjona it is evidently a good bargain.

Epic. My son, believe me. Life eternal, the communication with the Supreme Being has nothing in common with your Simon Barjona. The good and great God, *Deus optimus maximus*, who animated the Catos, the Scipios, the Ciceros, the Paulus Emilius', the Camillus', the father of gods and men has certainly not deputed his power into the hands of a Jew. I knew that these wretches were the most superstitious people of Syria, but I did not know that they durst carry their madness so far as to call themselves the prime ministers of God.

Son. But, my father, they continually work miracles. (*Here Epictetus smiled*), you smile father, you shrug up your shoulders.

Epic. Alas! in the hour of death one is little disposed to laugh, but you force me my poor child! have you seen these miracles?

Son. No; but I have seen men who have spoke to women, who said that their acquaintances had seen them. And besides the morality of these washed and circumcised Jews is so admirable!

Epic. And what are the moral precepts of these people?

Son. They are, first, that a rich man cannot be a good man, and that it is more difficult for him to gain the kingdom of heaven or the garden, than for a camel to pass thro' the eye of a needle; for which reason all the rich ought to give their property to the beggars who preach this kingdom and this garden.

2. That

2. That none are happy but fools, or the poor in spirit.

3. That whoever listens not to the assemblage of beggars ought to be detested like a receiver of taxes.

4. That he who hates not his father, his mother, and his brethren. shall have no part in the kingdom of heaven or the garden.

5. That the sword must be borne, and not peace.

6. That when a marriage feast is made, we ought to compel passers by to come to the nuptials, and throw those out into the bottom of a deep ditch who have not a wedding garment.

Epic. Alas! my son, I was just now at the point of dying with laughter, and I perceive that your information kills me with grief and indignation. If the wretches you speak of seduce the son of Epictetus, they will seduce many others. I foresee dreadful misfortunes on earth. Are these energumens numerous.

Son. Their number increases daily. They have a common treasury, out of which they pay certain Greeks who write for them. They have invented mysteries and exact inviolable secrecy. They have appointed inspired men, who decide on all their interests, and never allow any of their sects to refer to the magistrate.

Epic. *Imperium in Imperio.* My son, all is lost.

A, B, C; or, Dialogues between A, B and C.
Translated from the ENGLISH by Mr. HUET.

D I A L O G U E I.

Concerning HOBBS, GROTIUS and MONTESQUIEU,

A.

WELL, you have read Hobbes, Grotius, and Montesquieu, what do you think of these three celebrated men?

B.

B. Grotius has often tired me; but he is very learned; he seems to love reason and virtue; but reason and virtue affect the mind but little when they are fatiguing; besides which, he sometimes appears to reason ill. Montesquieu has a great fund of imagination on a subject that requires only judgment; he deceives himself much too often with regard to facts, and sometimes even in arguments; Hobbes is very harsh as well as his style; but I fear his harshness is not often the indication of truth. In a word, Grotius is an absolute pedant, Hobbes a melancholy and sour philosopher, and Montesquieu a polite wit.

C. I am almost entirely of your opinion. Life is too short, and we have too many things to engage our attention to learn of Grotius, that according to Tertullian cruelty, fraud, and injustice are the companions of war. That Carneades defended falsehood like truth; that Horace*, in one of his satires, has said that nature cannot

* *Nec natura potest justo fecernere iniquum.*

This cruel verse is found in the third satire. Horace attempts to prove against the stoics, that all crimes are not equal. Punishment, says he, ought to be proportioned to the offence.

Regula peccatis quæ penas irroget æquas.

It is reason, the law of nature, which teaches this justice. Nature therefore knows just from unjust. It is very evident, that nature teaches all mothers, that it is better to correct than kill a child; that it is better to give it bread than to pluck out its eye; that it is more just to assist one's father than to suffer a wild beast to devour him; and that it is more just to keep than violate one's promise.

We find in Horace, before this verse, *Nec natura potest justo fecernere iniquum*; nature cannot distinguish just from unjust; before this verse, I say, there is another which seems to say quite the contrary. *Jura inventa metu injusti fateare necesse est.* It must be confessed, that laws were invented thro' the fear of injustice.

Nature therefore distinguished just from unjust before laws were made. Why should he be of another opinion from Cicero and all the moralists, who admit a natural law? Horace was a *débauché*, who recommended the ladies of pleasure and boys, I allow; who derided poor old women; who flattered Octavius more basely than he cruelly attacked obscure citizens; this is true: that he often changed his opinion I am concerned to observe; but I suspect that his meaning in this place is quite the contrary to what he is made to say. For my part, I read, *Et natura potest justo fecernere iniquum*, others may put a *nec* in the place of *et*, if they please. I find the sense of the words more consistent as well as the grammar, *et natura potest*, &c.

If

distinguish just from unjust, that according to Plutarch, infants have compassion; that Chrysippus has said, that the origin of right is in Jupiter: that if we believe Florentin, nature has placed a kind of relationship between men, and that Carneades has said, that utility is the mother of justice.

I confess that Grotius gives me pleasure when he says, in the first chapter of the first book, that the Jewish law was not binding to strangers. I think with him that Alexander and Aristotle are not damned for having kept their prepuce, and for not having employed the sabbath day in doing nothing. Fierce theologians have set themselves against him with their usual absurdity, but for my part, who, thank God, am no theologian, I find Grotius a very good man.

I confess that he knows not what he says, when he pretends that the Jews taught circumcision to other people. It is at present sufficiently well known, that the little Jewish horde took all its ridiculous customs from the powerful nations by which it was surrounded: but what has circumcision to do with the rights of war and peace.

A. You are right, the compilations of Grotius do not deserve that esteem which ignorance has paid them. To quote the thoughts of old authors, who have spoken for or against the question, is not to think. Thus it is that he very grossly deceives himself in his book of the Truth of the Christian Religion by copying Christian authors, who

If nature did not distinguish between just and unjust, there would be no moral difference in our actions. The stoics would seem to be right in maintaining, that all crimes against society are equal. It is very strange that St. James seems to fall into this excess of the stoics, when he says, in his epistle, *whosoever shall keep the whole law, and yet offend in one point, he is guilty of all.* St. Augustin, in a letter to St. Jerom, rather opposes St. James, but afterwards excuses him by saying, that he who is guilty of one transgression is guilty of all, because he wanted charity, which comprehends all. O Augustin, how has a man, who is drunk or committed fornication, how has he been deficient in charity? Thou perpetually abusest words, O thou African sophist? Horace had an understanding much more correct and refined than thine.

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have said that their predecessors, the Jews, were the teachers of the world, while the little Jewish nation itself never had that insolent pretension, for, shut up within the rocks of Palestine and its own ignorance, it did not even admit the immortality of the soul, which all its neighbours allowed of.

In this manner he proves the truth of the Christian religion by Hyftaspes and the Sibyls, and the adventure of the whale, which swallowed Jonas, by a passage in Lycophron. Pedantry and justness of thought are incompatible.

A. Montesquieu is no pedant. What do you think of his Spirit of Laws.

B. He has afforded me much pleasure, because he has much wit, many bold, strong, and true things, and whole chapters worthy of the Persian letters. Chap. XXVI. of Book XIX. is the portrait of your England, drawn in the manner of Paul Veronese, with a brilliancy of colouring, ease of outline, and some faults in the costume. That of the inquisition and negro slaves are above Calot. He every where combats despotism, renders the financiers odious, the courtesans despicable, and the monks ridiculous: so that every one who is neither monk, financier, nor minister, nor aspiring to be so, has been charmed; particularly in France.

I am sorry that this book is a labyrinth without a clue, and is totally without method. It is singular that a man who writes in the laws should say in his preface, that no fallies or digressions will be found in his work; and it is still more strange that his book should be a collection of nothing else. He is Michael Montaigne turned legislator; he was likewise of the same Province.

I cannot forbear laughing when I run over more than one hundred chapters, which do not contain a dozen lines, and many not more than two. It seems that the author always endeavoured to joke with his reader in the greatest manner.

Our laughter is again excited, when, after citing the Greek and Roman laws, he speaks seriously of

those of Bantam, Cochin, Tonquin, Borneo, Jacatra, Formosa, as if we were in possession of faithful memoirs of the government of all those countries. He too often mixes falsehood with truth; he tells you after Puffendorf, that in the time of Charles IX. there were twenty millions of men in France*. Puffendorf spoke very much at hazard. The numeration was never made in France, and they were even too ignorant to suspect that an estimate of the number of inhabitants might be made from the births and burials. France at that time possessed neither Lorrain nor Alsatia, nor Franche-comté, nor Roussillon, nor Artois, nor Cambray, nor any part of Flanders; and at present it possesses all these provinces; it is proved that it contains no more than twenty millions of souls, at most, by the number of dead exactly taken in 1751.

The same author affirms on the faith of Chardin, that the little river Cyrus is the only navigable river in Persia. Chardin has not made this oversight. He says, Chap. I. Vol. II. that there is no river that carries vessels into the heart of the kingdom; but without reckoning the Euphrates, the Tigris, and the Indus; all the frontier provinces are washed by rivers, which contribute to the facility of commerce and the fruitfulness of the earth; the Zinderud traverses Hispahan, the Agi joins at Kur, &c. and besides, what have the rivers of Persia to do with the Spirit of Laws.

The reasons he produces for the establishment of great empires in Asia, and the multitude of small powers in Europe, seem to be as false as what has been affirmed of the rivers of Persia. *In Europe, says he, great empires have never been able to subsist; the Roman power notwithstanding subsisted more than five hundred years; and the cause, continues he, of the duration of these great empires is, that there are extensive plains (in Asia).* He never recollected that Persia is divided by mountains; he never thought of Caucasus, Imaus, Taurus, Ararat, Saron, &c. &c. We ought neither to give reasons of things

* The supposition has been carried as far as twenty-nine millions.
I which

which do not exist, nor false reasons of those which do exist.

His pretended influence of climates on religions, is taken from Chardin, and is no better founded. The mahometan religion is produced in the dry and burning soil of Mecca, flourishes at this day in the fine countries of Asia Minor, Syria, Egypt, Thrace, Mysia, the northern part of Africa, Servia, Dalmatia, Epirus, Greece; it has prevailed in Spain, and had nearly gone as far as Rome. The Christian religion was born in the stoney land of Jerusalem, in a country so leprous, that the hog is almost mortal food. Jesus never eat pork, and it is eaten among the Christians: their religion predominates in the muddy soil of Westphalia, where pork is almost the only food. There would be no end if we were to examine into the errors of this kind which swarm in this book.

That which is still more disagreeable to a reader a little instructed, is that almost all the quotations are false; he almost always takes his imagination for his memory.

He pretends that in the testament attributed to Cardinal Richelieu, it is said, that, ** if among the people there should be found an unfortunate virtuous man, he ought not to be employed, so true it is that virtue is not the produce of monarchical government.*

The miserable testament, falsely attributed to Cardinal Richelieu, says precisely the contrary. Here are the words of chap. IV. *We may confidently say, that of two persons of equal merit, he who is easiest in his affairs is to be preferred, it being certain that a poor magistrate ought to have a very strong mind, not to be sometimes softened by the consideration of his interest. So experience confirms that the rich are less liable to be shaken than the others, and that poverty constrains a poor officer to be very careful in every thing that concerns his purse.*

Montesquieu, it must be confessed, does not cite the Greek authors more correctly than the French. He fre-

* Book iii. Chap. vi.

quently makes them say the contrary to what they really say.

He advances, in speaking of the women in several governments, or rather in promising to speak of them, that among the Greeks †, *love had no other form than that which is unfit to be mentioned*. He does not hesitate to take Plutarch himself for his authority; he makes Plutarch say, that *women have no part in real love*. He does not reflect that Plutarch makes many interlocutors. There is a Protogenes who declaims against the women, but Daphneus takes their part. Plutarch decides for Daphneus: he makes a beautiful panegyric on celestial and conjugal love, and concludes by relating several examples of the fidelity and courage of women. It is even in this dialogue that we find the history of Camma, and that of Eponimes wife of Sabrinus, whose virtues have served as subjects for theatrical pieces.

On the whole, it is clear that Montesquieu in the Spirit of Laws, has calumniated the understanding of the Greeks, by taking an objection which Plutarch refutes, for a law which Plutarch recommends.

* *The Cadis have maintained that the Grand Signior is not obliged to keep his word or his oath, when his authority is lessened by that means.*

Ricaut cited in this place, says only, page 18, of the Amsterdam edition of 1671, *There are even people who maintain that the Grand Signior can dispense with promises made upon oath, which for the accomplishment, it is necessary to set bounds to his authority.*

This discourse is quite vague. The Sultan can promise only to his subjects or the neighbouring powers. If his promises are to his subjects, they are not made by oath, and if to the neighbouring powers, he must keep his treaties like other princes, or else go to war. The Alcoran does in no place say that an oath may be violated; but in many that it must be kept. It may be that, in order to undertake an unjust war, as almost all wars are, the Grand Turk, like many Christian princes,

† Book vii. Chap. x.

* Book iii. Chap. ix.

may assemble a council of conscience, in order to will for conscience sake. It may have happened that some mussulmen have irritated the Catholic doctors, who say that faith is not to be kept either with infidels or heretics; but it remains to be discovered, whether this jurisprudence is that of the Turks.

The author of the Spirit of Laws gives this pretended decision of the Cadis, as a proof of the despotism of the Sultan: it seems this on the contrary is a proof that he is subjected to the laws, since he is obliged to consult the Cadis, in order to set himself above them. We are neighbours to the Turks, and are yet unacquainted with them. The Count de Marfigli, who has long lived in the midst of them, says, that no author has given a true account either of their empire or their laws. We have not even had a tolerable translation of the Alcoran, before that which was published by Sale an Englishman, in 1734. Almost all that has been said of their religion and jurisprudence is false, and the conclusions which we daily make against them have little foundation. In the examination of laws, we ought to cite none but such as are known and acknowledged.

* *All the lower kinds of commerce (bas commerce) were infamous among the Greeks.*

I do not know what Montesquieu understands by the lower kinds of commerce; but I know that in Athens all the citizens traded, that Plato sold oil, and that the father of the demagogue Demosthenes was a dealer in iron. The greater part of the workmen were strangers or slaves. It is worth remarking, that trade was not incompatible with dignities in the republics of Greece, except among the Spartans who had no trade.

† *I have frequently heard it deplored, says he, that Francis the First rejected the proposal of Christopher Columbus, respecting the discovery of the Indies: you will remark that Francis I. was not born when Columbus discovered the isles of America.*

Since we are speaking of commerce, let us observe that the author condemns an ordinance of the council of

* Book iv. Chap. viii.

† Ibid. Chap. xix.

Spain, which forbids the employing gold and silver in gilding. ‡ *Such an act is as if the Dutch were to forbid the consumption of cinnamon.* He does not observe that the Spaniards having no manufactures, had bought laces and stuffs from foreign countries, and that the Hollanders could not buy cinnamon. That which was very reasonable in Spain, would have been very ridiculous in Holland.

* *If a king were to give his voice in the judgment of criminals, he would lose the first attribute of his sovereignty, that of pardoning. He must be void of sense who made and unmade his judgment. He would be in contradiction with himself. Besides, that it would confound all ideas, we should not know whether a man were absolved by the hand of justice, or pardoned by the hand of mercy.*

All this is evidently erroneous. Who would hinder the sovereign from pardoning, after having himself been in the number of the judges? How is he in contradiction with himself, in judging by the laws, and pardoning by his clemency? In what respect would ideas be confounded? How could any one be ignorant that the king had publicly pardoned after condemnation?

In the process concerning the duke d'Alençon, peer of France, in 1457, the parliament being consulted by the king to know if he had a right to assist in the judgment of a process relating to a peer of France, answered, that they had found by their registers, that the kings of France not only had that right, but that it was necessary they should assist in quality of the first peers.

This usage is preserved in England. The kings of England delegate their place on these occasions to a high steward who represents them. The emperor can assist at the judgment of a prince of the empire. It is doubtless much better that a sovereign should not assist at the judgments of criminals. Men are too weak and dastardly, the breath of a prince would incline the balance too much.

‡ Book iv. Chap. xix.

* Book vi. Chap. v.

* *The Engilsh, to favour their liberty, have taken away all the intermediate powers which formed their monarchy.*

The contrary is a well known truth. They have made the House of Commons an intermediate power which balances that of the peers. They have only stopped the power of the ecclesiastics, which ought to be a praying, edifying, exhorting and not a powerful society.

The deposit of the laws ought not to be in the hands of the nobility. The ignorance natural to the nobility, their inattention, their contempt for the civil government, require that another body should be charged with this deposit.

Nevertheless the deposit of the laws of the empire is in the hands of the princes at the diet of Ratisbon. This deposit in England, is in the hands of the upper house: in Sweden, it is in the senate, which is composed of the nobles; and in the last place, the empress Catharine II. in her new code, the best of all codes, places this deposit in the hands of the senate, composed of the great men of the empire.

Is it not necessary to distinguish between the laws which relate to politics and those of distributive justice? Ought not the laws of politics to have for guardians the principal members of the state? The laws of *meum & tuum* and relating to crimes, need only to be well made and printed: the deposit ought to be with the booksellers. The judges ought to conform to them, and when they are ill adapted, as it often happens, they ought to remonstrate to the supreme power that they may be changed.

The same author pretends, that at Tonquin all the magistrates and principal military officers are eunuchs, and that among the lamas, the law permits women to have a plurality of husbands. Suppose these fables to be true, what is the consequence? Will our magistrates become eunuchs, and be only in the fourth or fifth places with the ladies counsellors.

Why should he lose his time in deceiving himself about the pretended fleets of Solomon, sent from Escongaber,

in Africa, and the chimerical voyages from the Red Sea to Bayonne, and the still more chimerical riches of Sofala? What have all these erroneous digressions to do with the Spirit of Laws?

I expected to have seen how the decretals changed all the jurisprudence of the ancient Roman code, by what laws Charlemagne governed his empire, and by what anarchy the feudal government overturned it; by what art and boldness Gregory VII. and his successors overturned the laws of kingdoms, and great fiefs, under the ring of the fisherman, and by what shocks the papal legislation has been destroyed. I hoped to see the origin of the bailliages which distributed justice almost every where since the Othos, and that of tribunals called parliaments, or audiences, or king's bench, or exchequer. I was desirous of knowing the laws under which our ancestors and their children lived; the motives by which they were established, neglected, destroyed, renewed; but unfortunately, I have often met with nothing more than wit, raillery, imagination and error.

For what reason did the Gauls, enslaved and impoverished by the Romans, continue to live under the Roman laws, when they were again subjugated and plundered by a horde of Franks? What were precisely the laws and usages of these new robbers?

What rights did the Gaulish bishops arrogate to themselves while the Franks were masters? Had they not sometimes part in the public administration before the rebel Pepin admitted them into the parliament of the nation?

Were there hereditary fiefs before Charlemagne? A number of questions of this nature present themselves to the mind. Montesquieu resolves none of them.

What was that abominable tribunal instituted by Charlemagne in Westphalia: the bloody tribunal called the Weimique council, a tribunal yet more horrible than the inquisition, a tribunal composed of unknown judges, which condemned to death on the simple report of their spies, and whose executioner was the youngest counsellor of this little senate? What! does Montesquieu talk to

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me about the laws of Bantam, and does not know those of Charlemaigne, but takes him for a good legislator.

I fought a clue in this labyrinth; the thread is broken at almost every article. I have been deceived; I have found the spirit of the author in abundance, but rarely the spirit of laws; he jumps more than he walks; he amuses more than he enlightens; he satirizes more than he judges, and makes one wish that so great a genius had attempted more to instruct than to surprise.

This very defective book is full of admirable things of which detestable copies have been made. In short, the fanatics have insulted him for those very passages which deserved the thanks of all mankind.

In spite of all its errors, the work ought to be ever dear to men because the author has sincerely spoke his thoughts, instead of which the major part of the writers of his country, to begin with the great Bossuet, have often spoken what they did not think. He has every where reminded men that they are free. He offers to human nature the titles which it had lost in the greatest part of the earth; he combats superstition and inspires morality.

I must confess to you moreover how much I am afflicted that a book which might be so useful should be founded on a chimerical distinction. *Virtue*, says he, *is the principle of republics and honor of monarchies*. Republics were certainly never founded by virtue. Public interest opposed itself against the dominion of a single man; the spirit of propriety, the ambition of each individual have been curbs to ambition and the spirit of rapine. The pride of every citizen has watched over the pride of his neighbour. No one chose to be the slave to another's fancy. This is what establishes and preserves a republic. It is ridiculous to imagine a Grison must have more virtue than a Spaniard.

That honor is the principle of pure monarchies is an idea not less chimerical, and he makes this appear very clear without reflecting; *the nature of honor*, says he, at Chap. VII, Book III, *is to require preference and distinction*.

inction. It is therefore, by this very thing placed in the monarchic government.

Certainly by this very thing, prætorates, consulships, ovations, triumphs were demanded in the Roman republic. These are preferences and distinctions, quite equal to the titles which are frequently purchased at fixed rates in monarchies. There is another foundation of his book which does not seem to me to carry less falsity in it; it is the division of governments into republican, monarchic and despotic.

It has pleased our authors, for what reasons I know not, to call the sovereigns of Asia and Africa despotic. By the word despot was formerly understood a little prince of Europe, vassal to the Turk and moveable, a kind of crowned slave, governing other slaves. The word in its origin signified among the Greeks, master of the house, father of the family. At present, we liberally give this title to the emperor of Morocco, the great Turk, the pope and the emperor of China. Montesquieu at the beginning of his second book, thus defines despotic government, *A single man without law, and without any fixed rule, doing every thing by his will and caprice.*

Now it is entirely false that such a government exists, and it appears to me to be impossible it should. The Alcoran and the approved Commentaries are the laws of Mussulmen. All the monarchs of this religion swear on the Alcoran to observe these laws. The ancient corps of military and people of the law have immense privileges; and when the Sultans have chosen to violate these privileges they have always been strangled or at least solemnly deposed.

I have never been at China; but I have seen more than twenty people who have made the voyage, and I believe I have read all the authors who have spoken of that country. I know much more certainly than Rollin knew the ancient history, I know, I say, by the unanimous report of our missionaries of different sects, that China is governed by the laws, and not by an arbitrary will. I know that there are in Pekin six supreme tribunals,

bunals, to which forty four-other tribunals refer. I know that the remonstrances made to the emperor by these six supreme tribunals have the force of law. I know that the meanest carrier of burthens at the extremity of the empire is not put to death without his trial being carried to the supreme tribunal at Pekin, which reports it to the empire. Is this an arbitrary and tyrannic government? The emperor is more revered than the pope is at Rome, but is it necessary to reign without the control of the laws in order to be respected? A proof that it is the laws which reign in China is, that the country is more populous than all Europe. We have carried our holy religion to China, but without success: we might have taken their laws in return; but that is perhaps a kind of commerce we have no skill in.

It is very certain that the bishop of Rome is more despotic than the emperor of China; for he is infallible, and the emperor of China is not; yet this bishop is even subject to laws.

Despotism is only the abuse of monarchy; the corruption of a good government. I would as soon chuse to place the robbers on the highway among the bodies of the state, as place tyrants in the rank of kings.

A. You do not mention the venality in the employs of judicature, this happy traffic of the laws which the French alone in the whole world are acquainted with. Those people must be the greatest traders in the world, since they buy and sell even the right of judging mankind! What the devil! if I have the honor to be born a Picard or Champenois, and to be the son of the keeper of a cook's shop, I could by the means of twelve or fifteen thousand crowns become one seventh part master of the lives and fortunes of my fellow citizens, they would call me monsieur in the protocol of my colleagues, and I should call the clients by their names in short; even if they were Chatillon or Montmorenci and should become the tutor of kings by means of my money! 'Tis an excellent bargain. I should besides have the pleasure of burning all the books that displeased me,

me, by him whom J. J. Rousseau would make father-in-law to the Dauphin *. This is a great privilege.

B. It is true that Montesquieu was weak enough to say, that the venality of offices, *is good in a monarchy* †. What would you have him say? he was *président à mortier* in a province. I have never seen *de mortier*, but imagine it to be some superb ornament. It is very difficult for the most philosophic spirit not to pay its tribute to self-love. If a dealer in spices were to talk of legislation he would choose that all the world should buy cinnamon and nutmegs.

A. All this does not prove but that there are excellent passages in the Spirit of Laws: I love men who think and make me think. In what rank do you place this book?

B. In the rank of those works of genius which make the reader desirous of perfection. It appears to me an edifice ill built and irregularly constructed, in which there are many elegant apartments gilt and varnished.

A. I can pass some hours in these apartments with pleasure; but I cannot remain a moment in those of Grotius; they are too ill laid out and furnished in an antique stile. But what is your opinion of the edifice which Hobbes has erected in England?

C. It has quite the appearance of a prison; for scarce any live in it but criminals and slaves. He says, that man is born the enemy of man, that the foundation of society is the assemblage of all against all. He pretends that authority alone makes the laws; that truth ‡ does not enter into them; he does not distinguish royalty from tyranny. With him force does every thing; there is indeed some truth in a few of his notions; but his errors have so offended me, that I would neither choose to be a citizen of his town when I read his *de Cive*, nor be devoured by his great beast Leviathan.

* Vide Emile, tom. 4. p. 178.

† Book v. Chap. 19.

‡ The word truth is here employed by Hobbes not very significantly, he should have said justice.

B. You

B. You appear to me to be very little contented with the books you have read, gentlemen; yet you have derived improvement from them.

A. Yes; we take what appears to be good from Aristotle down to Locke, and laugh at the rest.

C. I wish to know what is the result of all your reading and reflection.

A. Little or nothing.

B. No matter: let us endeavor to give an account of the little we know without verbosity, without pedantry, without any ridiculous attachment to the tyrants of the mind or the tyrannized vulgar; in short, with all the candor of reason.

D I A L O G U E II.

B.

LET us begin. It is good before we assure ourselves of what is just, honest and becoming between human souls, to know from whence they came and where they go; we are desirous of being intimately acquainted with the people we transact business with.

C. That is well said; tho' it is not of the utmost importance. Whatever may be the origin and destiny of the soul, the essential thing is to be just; but I love to discuss this matter which gave so much pleasure to Cicero. What do you think, Mr. A? is the soul immortal?

A. But Mr. C, your question is rather abrupt. It appears that in order to know whether the soul is of itself immortal we ought first to be certain that it exists, and this is a thing I have no knowledge of, unless by faith which destroys all difficulties. Lucretius has affirmed eighteen hundred years ago, *ignoratur enim quæ sit natura animæ*. We are ignorant, he might say, both of the nature and existence of the soul: I have read two or three hundred dissertations on this grand subject; but they have taught me nothing. Thus I am with you

as St. Augustin was with St. Jerom. Augustin tells him directly that he knows nothing of that which relates to the soul. Cicero, a much better philosopher than Augustin has said the same thing before him, but much more elegantly. Our young batchelors know more of the matter doubtless, but for my part I know nothing, and at the age of eighty, find myself as much advanced as the first day.

C. That is because you dote. Are not you certain that beasts have life, that plants have vegetation, that the air has its fluidity, and the winds their courses? Do you doubt that you have an ancient soul that directs your ancient body?

A. It is precisely, because I know nothing of all you alledge, that I am absolutely ignorant that I have a soul when I consult my feeble reason. I see that the air is agitated, but I see no real being in the air which is called the course of the wind. A rose vegetates; but there is not a little concealed being in the rose called vegetation: that assertion would be as absurd as for a philosopher to affirm that the odour is in the rose. Yet this absurdity has been affirmed for ages. The ignorant physiology of all antiquity says that odour leaves the flower to come to my nose: colours come from bodies to my eyes: a kind of separate existence was made of smell, taste, sight and hearing: it even went so far as to believe that life was a certain thing that caused the animal to live. The misfortune of all antiquity was in this manner to transform words into real things; they pretended that an idea was a being; that ideas, or archetypes, which existed I know not how, were to be consulted. Plato gave a course of this jargon which was called philosophy. Aristotle reduced the chimera to method and order; whence sprung the entities, quiddities, acceties and all the barbarity of the schools.

Certain sages perceived that all these imaginary beings were only words invented to assist our understanding. That the life of an animal is nothing more than the living animal; that its ideas are the thinking animal; that the vegetation of a planet is nothing more than the vegetating

vegetating plant: that the motion of a ball is no more than its continual change of place; and, in a word, that every metaphysical idea is no more than one of our conceptions. It has required two thousand years to set these philosophers right.

C. But if they are right, if all these metaphysical beings are mere words, your soul which passes for a metaphysical being is consequently nothing. We have then really no soul?

A. I do not affirm that; I say that I know nothing at all of myself. I believe only that God gives us five senses and thought; and it can well be that we may be in God as Aratus and St. Paul say, and that we see things in God according to the opinion of Mallebranche.

C. According to this I may have thoughts without having a soul; which would be very whimsical.

A. Not quite so whimsical: Do not you agree that animals have thought?

B. Affuredly: It would be renouncing common sense to deny it.

A. Do you believe that there is a little unknown being which you name sensation, memory, appetite, or express by the vague and inexplicable term soul.

B. Doubtless, no: no one believes it. Beasts think because it is their nature, because that nature has given them all the organs of sensation; because the author and principle of all nature has determined it so for ever.

A. Well then: this eternal principle has so arranged things that when I have a head properly formed, when my brain is neither too humid nor too dry, I shall have thought, and I thank him with all my heart.

C. But in what manner or by what means have you thought in the brain.

A. Again, I say I am ignorant. A philosopher has been persecuted for having said forty years ago in a time when thought was yet enslaved in his country, that *the difficulty is not only to know whether matter can think, but to know how any being whatsoever can have thought*. I am of the opinion of this philosopher, and affirm, in contempt
of

of all silly persecutors, that I am entirely ignorant of all the first principles of things.

B. You are profoundly ignorant, as well as me.

A. I grant it.

B. Why then do we reason? How should we know what is just or unjust if we are ignorant even of what the soul is?

A. There is a very great difference; we know nothing of the principle of thought; but we are very well acquainted with our interest. It is evident to us that it is our interest to be just to others, and that others should be so towards us; in order that all who live on this heap of mud may have as little unhappiness as may be during the short time the Eternal has allowed us to vegetate, to perceive and to think.

D I A L O G U E III.

Whether Man is born wicked and a Child of the Devil.

B.

YOU are an Englishman, Mr. A. you will frankly tell us your opinion concerning just and unjust, government, religion, war, peace, the laws, &c.

A. With all my heart: what I find most equitable is liberty and property. I am very glad to contribute to give my king a million sterling per annum for his household, provided I may enjoy my property in my own. I wish every one to have his prerogative; I know no laws but those which protect me; and I find our government the best in the world because every man knows what he possesses, what is required of him, and what power he has. Every thing is subjected to the laws, to begin with royalty and religion.

B. You do not then allow of divine right in society?

A. All is divine right, if you please, because God has created men, and nothing happens without his divine will and the concatenation of eternal laws eternally executed;

ecuted; the archbishop of Canterbury, for example, is no more archbishop by divine right than I am born member of Parliament; when it shall please God to descend to earth in order to give a benefice of twelve thousand guineas a year to a priest, I will then say that his benefice is of divine right; but till then I shall believe his title and right to be merely human.

B. So that every thing is convention among men: this is quite the sentiment of Hobbes.

A. Hobbes in that has been no more than the echo of all sensible men. All is convention or force.

C. There is then no law of nature?

A. There certainly is; it is interest and reason.

B. Man then is in effect born in a state of war, since our interest almost always is counter to that of our neighbours, and we make our reason sustain that interest which animates us.

A. If the natural state of man were that of war, all men would cut each other's throats, and the species would have long since been destroyed (which God forbid). The same would have happened to us that happened to the serpents teeth of Cadmus; they fought and not one remained. Man being born to destroy his neighbour, and to be destroyed, would necessarily fulfil his destiny as the vultures accomplish theirs by eating my pigeons, or the pole-cats in sucking the blood of my fowls. We know people who never make war; it is said of the brachmen and of many people of the American isles, whom the christians exterminated, not being able to convert them. The primitive christians, whom we call quakers, begin to compose a considerable nation in Pensylvania, and they hold war in detestation. War is not therefore essential to mankind.

B. It is notwithstanding necessary that the wish to destroy, the pleasure of exterminating one's neighbour for a slight interest, the most horrible villainy and the blackest perfidy, should be the distinctive character of our species, at least since the original sin; consequently the mild theologians affirm that from that moment the devil took possession of our whole race; consequently the devil is our

master as you know, and a vile master he is; therefore all men resemble him.

A. That the devil may be in the bodies of the theologians I am ready to allow; but assuredly he is not in mine. If the human species were under the immediate government of the devil as is said, it is clear that husbands would destroy their wives, sons would kill their fathers, mothers would eat their children, and the first thing an infant would do as soon as it had teeth, would be to bite its mother, provided its mother had not first put it to the spit. Now, since nothing of this happens, it is proved that they mock us, when they say we are under the power of the devil, it is the most senseless blasphemy that was ever pronounced.

C. Upon reflection, I confess that mankind is not quite so wicked as certain people exclaim in hopes of governing them; they resemble those surgeons who suppose that all the ladies at court are attacked with that shameful disorder which produces much money to those who cure it. There are disorders without doubt, but every one is not in the hands of the faculty. There are great crimes, but they are rare. No pope for more than two hundred years has resembled Alexander VI. no king of Europe has well imitated Christian II. of Denmark, or Louis XI. of France. We hear of only one archbishop of Paris who went into the parliament with a poignard in his pocket. The day of St. Barthelémy is very horrible, whatever the Abbé de Carveirac may please to say; but at length when we see all Paris busied with the music of Romeau or Zaire, or the opera comique, or painting exposed in the saloons of Ramponeau, or the ape of Nicolé, we forget that half the nation two hundred years ago cut each others throats on account of arguments in theology; the abominable punishments of Jane Gray, Mary Stuart, of Charles I. are not renewed every day among you.

These epidemic horrors are like great plagues which sometimes ravage the earth; after which men labour, plant, gather, drink, dance and make love on the cinders of the dead which are under their feet, and as a man
I
said

said who passed his life in thinking, reasoning and joking, if the whole is not good, it is passable.

There are provinces in Touraine, for example, where a great crime has not been committed for an hundred and fifty years. Venice has seen more than four ages pass over without the least sedition within her limits, or a single tumultuous assembly; there are a thousand villages in Europe in which a single murder has not been committed; since the mode of cutting throats on account of religion is a little passed over, labourers have no time to spare from their work; their wives and daughters assist them, they sew, they spin, they knead, they bake, not after the manner of the archbishop La Caza*, all these good people are too much employed to think of evil. After a work which is agreeable, because necessary to them, they make a light repast, which appetite seasons, and yield to sleep, in order to begin again the day following. I have no fear for them but on the holidays, so ridiculously consecrated to psalm singing, with a hoarse and discordant voice in Latin, which they understand not, and to lose their reason in a publick house which they understand but too well. Once more, if the whole is not good, it is passable.

B. By what madness then have they been able to imagine that there exists a hobgoblin with an open mouth, four claws of a lion, and a serpent's tail, that he is accompanied by a thousand resembling himself, all descended from heaven and shut up in a subterraneous furnace; that Jesus Christ descended into this furnace to chain all these animals; that since that time, they every day come out of their prison, that they tempt us, and enter into the body and souls of men; that they are our absolute sovereign, and inspire us with all their diabolic perversity. From what source could so extravagant an opinion, so absurd a tale originate?

A. From the ignorance of the faculty.

B. I did not imagine it.

* Vide the Captoli of Monsignor La Caza, and you will see his method of baking.

A. But you ought to imagine it. You know that before Hippocrates, and even after him, physicians understood nothing of diseases; whence, for example, came the epilepsy for example? From mischievous gods or evil genii, which was therefore called *morbum sacrum*. The evil was in the same situation. These disorders were the effects of miracles, and therefore required a miracle to remove them; pilgrimages were made: the diseased were touched by the priests; this superstition has made the tour of the world, and is still in vogue among the inferior orders of the people. In an excursion to Paris, I saw epileptics in the holy chapel, and St. Maur, who made great outcries and contorsions the night between Holy Thursday and Friday; and our deposed king James II. as a sacred person, imagined he could cure the evil occasioned by the devil. Every unknown malady was then formerly the possession of an evil genius. The melancholic Orestes passed for being possessed by Megara, and was sent to steal a statue in order to obtain his cure. The Greeks who were quite a new people, had that superstition from the Egyptians; the priests and priestesses of Isis went through the world telling fortunes, and delivered, for the sake of money, the fools who were under the empire of Typhon. They made their exorcisms with the tabors and castanets. The miserable race of Jews established among the rocks between Phenicia, Egypt and Syria, adopted all the superstitions of their neighbours, and in the excess of their brutal ignorance, added new superstitions to them. When this little horde was in slavery at Babylon, they learned the names of the Devil, Satan, Asmodeus, Memnon, Beelzebub, all servants of the evil principle Arimaneus. And then it was that the Jews attributed sickness and sudden death to the operation of devils. Their sacred books which they composed after that time, when they had the Chaldean alphabet, speak sometimes of devils.

You see that when the angel Gabriel descended express from the empyreum, to make the Jew Galiel pay a sum of money to the Jew Tobias, he led young Tobias or Tobit to Raguel, whose daughter had already espoused
seven

seven husbands, whose necks had been broken by the devil Asmodeus. The doctrine of the devil was in high estimation with the Jews. They admitted a prodigious quantity of devils into a hell, of which the laws of the Pentateuch had not spoken a single word: almost all their sick were possessed by the devil. Instead of physicians, they had exorcists in title and office, who drove out evil spirits by the root barath, by prayers and contortions.

The wicked passed for possessed still more than the sick. The debauched and perverse are always called children of Belial in the Jewish writings.

The Christians, who were half Jews for at least a century, adopted the notion of possessions, and boasted of their power to expel the devil. That fool Tertullian carries the madness so far, as to say, that every Christian, by the sign of the cross, constrained Juno, Minerva, Ceres and Diana to confess that they were devilesses. The legend reports that an ass chased the devils of Senlis, by drawing a cross on the sand with its hoof, at the command of St. Rieule.

By degrees, the opinion that all men are born possessed of the devil and damned was established, a strange idea without doubt, an execrable notion, a shocking outrage to the Deity, to imagine that he has continually formed sensible and reasonable beings for the sole purpose of being tormented for ever by other beings, eternally themselves plunged in torment. If the executioner, who at Carlisle, in one day, tore out the hearts of eighteen of the party of the prince Charles-Edward had been charged to establish a dogma, this is what he would have chosen: yet he must have been drunk; for had he even at once possessed the soul of an executioner and a theologian, he could never have invented in cold blood a system in which so many thousands of infants at the breast are delivered to eternal tormentors.

B. I am afraid the devil will reproach you with being a bad son who denies his father. Your British discourses seem to the good Roman Catholics, a proof that the devil possesses you, and that you will not con-

fels it; but I am curious to know how this idea, that an infinitely good being, every day makes millions of men to damn them, could enter in the brains of any one.

A. By an equivoue: as the papistic power is founded on a play of words. Thou art my Peter (a rock) and on this rock will I build my church.

Here follows the equivoue, which damns all little children. God forbids Eve and her husband to eat of the fruit of the tree of knowledge which he had planted in his garden; he says, the day in which ye shall eat it, ye shall die the death.—They eat and did not die. On the contrary, Adam lived nine hundred and thirty years. We must therefore understand another death; the death of the soul, damnation. But it is not said that Adam was damned: it must therefore be his children; and how so? It is that God condemns the serpent, who had seduced Eve to go on his belly, (for you know very well he walked upon his feet before that time.) And the race of Adam is condemned to be bitten on the heel by the serpent. Now, the serpent is visibly the devil, and the heel he bites is our soul. The man shall break the serpent's head as much as he can: it is clear that we ought to understand by that, the Messiah has triumphed over the devil.

But how has he broken the head of the old serpent? In delivering to him all the unbaptized infants. Here is the mystery. And how are the infants damned, because their first father and mother have eaten the fruit of their garden? This again is a mystery.

B. I stop you there. Is it not for Cain that we are damned, and not Adam? For we apparently descended from Cain, if I am not deceived; since Abel died without being married; and it seems more reasonable to be damned for a fratricide than an apple.

A. It could not be for Cain; for it is said that God protected him, and set a mark on him, lest any one should beat or slay him. It is even said that he founded a city at a time when he was almost alone on the earth with his father and mother, his sister who was his wife, and a son named Enoch. I have even seen one of the
most

most tiresome of books, intituled, *La Science du Gouvernement*, by a Seneschal of Forcalquier, named Real, who makes laws to be derived from the town built by our father Cain.

But be that as it may, it is out of doubt that the Jews never heard of original sin, nor the eternal damnation of little infants who died without being circumcised. The Sadducees who did not believe the immortality of the soul, and the Pharisees who believed the Metempsychosis, could not admit of eternal damnation, however inclined fanatics may be to admit contradictions.

Jesus was circumcised at eight days old, and baptized when adult, according to the custom of many Jews, who regarded baptism as a purification of the sins of the soul. It was an ancient usage of the people near the Indus and the Ganges, whom the brachmans had persuaded that water washes away sin, as well as other impurities. Jesus, in a word, circumcised and baptized, does not speak of original sin in any of the Evangelists. No apostle says, that little unbaptized infants shall be burned for ever on account of the sin of Adam. No one of the first fathers advances this cruel chimera; besides which, you know that Adam, Eve, Abel and Cain were known only to the little Jewish people.

B. Who then has first directly advanced this doctrine.

A. Augustine the African, a man in other things respectable, but who wrests some passages of St. Paul, to insert in his letters to Evodius and Jerom, that God precipitates infants from the bosoms of their mothers into hell, who perish in their early days. Read throughout the second book of the review of his works, Chap. XLV. *The Catholic faith teaches that all men are born so culpable, that even infants are certainly damned when they die without being regenerated in Jesus.*

It is true, that nature, rising in the heart of this rhetorician, made him tremble at this barbarous sentence; yet he pronounced it; he who so often changed his opinion did not retract this. The church appeared to wish for this terrible system in order to render her building
the

the more necessary. The reformed communions detest it. The greater part of theologians dare no longer admit it; yet they continue to remember that we belong to Hell. This is so true, that the priest, in baptizing these little creatures, asks them if they renounce the devil, and the sponsor is so good as to reply yes.

C. I am content with all you have said; I think the nature of man is not entirely diabolical. But why do they say that man is continually prone to evil?

A. He is prone to his own gratification, which is not an evil except when it oppresses his brethren. 'God has given him self-love, which is useful to him; benevolence, which is useful to his neighbour; anger, which is dangerous; compassion, which disarms him; sympathy with many of his companions, antipathy to others; many wants and much industry, instinct, reason and passions. This is man; and when you are of the number of the gods, try to make one on a better model.

D I A L O G U E IV.

Of the LAW of NATURE, and of CURIOSITY.

B.

WE are well convinced that man is not a being altogether detestable; but let us come to the fact; what do you call just and unjust?

A. That which to all the universe appears to be such.

C. The universe is composed of many heads; it is said that theft was applauded at Loudemon, while at Athens they condemned delinquents, in that particular, to the mines.

A. Mere abuse of words. Theft could not be committed in Sparta, every thing being in common. That which you call theft was the punishment of avarice,

B.

B. It was forbid to marry a sister at Rome. It was permitted among the Athenians, the Egyptians, and even the Jews to espouse the sister by the father's side. For notwithstanding the festival law, young Tamar said to her brother Ammon, My brother, do not this folly, but ask me in marriage of my father, he will not deny you.

A. All these are laws of convention, arbitrary usages, modes that pass away; the essential continues the same. Shew me a country in which it is esteemed commendable to snatch from me the fruit of my labour, to violate promise, to lie for mischief, to calumniate, assassinate, poison, to be ungrateful to a benefactor, or to beat your father and mother when they offer you food.

B. This is what I have read in a declamation which was known in its time. I have transcribed this passage which to me appears singular.

“ The first, who having enclosed a piece of land,
“ thought proper to say, this is mine, and found peo-
“ ple simple enough to believe him, was the true
“ founder of civil society. What crimes, murders,
“ miseries, and horrors would he have spared to the
“ human race, who, tearing up the stakes or filling the
“ ditch, had cried to his fellows: Beware of listening
“ to this impostor; you are lost if you forget that the
“ fruits belong to all, and that the earth is the property
“ of no one.”

C. It must have been some witty highwayman who wrote this ridiculous stuff.

I suspect only that it is some very lazy beggar; for instead of damaging the land of a wise and industrious neighbour, he had no more to do than to imitate him, and every father of a family having followed this example, a handsome village would quickly be built. The author of this passage seems to be a very unfociable animal.

P. You believe then that in committing this outrage and theft on the good man his neighbour, who had enclosed his garden and poultry yard, he was wanting in fulfilling the devoirs of the law of nature?

A.

A. Yes; I say once more there is a natural law, and it does not consist either in doing mischief to one's neighbour nor rejoicing in it.

C. There are people who say, that nothing is more natural than to do evil. Many children amuse themselves by pulling the feathers off their sparrows; and there are few men who do not run with a secret pleasure to the borders of the sea to enjoy the sight of a vessel tossed with the winds, which sinks by degrees in the waters, while the passengers raise their hands to heaven and sink into the abyss of the waters with their wives, who hold their children in their arms. Lucretius gives the reason:

Quibus ipse malis careas, quia cernere suave est.

We see with pleasure the evils we do not feel.

A. Lucretius did not know what he said; and is very subject to error notwithstanding his fine descriptions. We run to such a spectacle through curiosity. Curiosity is a sentiment natural to man, but there is not one of these spectators who would not use his utmost efforts to save the drowning people if he could.

When little boys and girls unfledge their sparrows it is purely by the spirit of curiosity, as when they pull to pieces their doll's cloaths. It is this passion alone that leads men to public executions. *Strange eagerness to see the miserable!* said the author of a tragedy.

I remember, that being at Paris when Damiens was made to suffer a death the most cruel and shocking that can be imagined, all the windows that looked to the place of execution were hired at great prices by the ladies. No one of them surely made the comfortable reflection that she should not have her breasts torn with red hot pincers, that melted lead and boiling pitch would not be poured into her wounds, and that four horses would not draw her dislocated and bloody limbs asunder. One of the executioners judged better than Lucretius; for when one of the academicians of Paris wished to enter the enclosure in order to view the business

ness more nearly, and was shoved back by the archers, *let the gentleman come in*, said he, *he is an amateur*, that is to say, curious; it is not by malice that he comes here, nor in consequence of any reflection on himself to enjoy the pleasure of not being torn in pieces; but solely by curiosity; as we go to see experiments in natural philosophy.

B. Be it so: I conceive that man neither loves nor commits evil but for his own advantage; but so many people are induced to procure their own advantage by the misfortunes of others, revenge is a passion so violent, of whose effects there are such dreadful examples; ambition, still more fatal, has inundated the earth with so much blood, that when I survey the horrid tablet, I am tempted to retract and affirm that man is diabolical. It may be that I have the notion of just and unjust in my heart. An Attila whom St. Leo courted, a Phocas whom St. Gregory flattered with the extreme of baseness, an Alexander VI. defiled with so many incests, homicides, and poisonings, with whom the weak Louis XII. called the Good, made the most unworthy and strict alliance; a Cromwell, whose protection was sought by Cardinal Mazarine, and for whom he chased the heirs of Charles I. cousin germans to Louis XIV. from France. An hundred similar examples derange my ideas, and I no longer know where I am.

A. Allowing this, should storms prevent us from enjoying the sunshine to-day? Ought the earthquake, which destroyed half Lisbon, prevent you from making the voyage with satisfaction from Madrid to Rome on the firm ground? If Attila was a robber, and Cardinal Mazarine a rogue, are there no princes nor ministers who are honest? And does not the idea of justice always subsist? On that idea are founded all laws; the Greeks called them daughters of heaven: which only means daughters of nature.

C. No matter, I am ready to retract likewise; for I see that laws have been made only because men are wicked. If horses were always gentle and docile, the bridle had never been used. But without losing our
time

time in diving into the nature of man, and comparing pretended savages with pretended civilized men, let us examine which is the curb that best fits our mouths.

A. I forewarn you that I shall not suffer myself to be bridled without being first consulted; that I will bridle myself, and give my voice to know, at least, who mounts on my back.

C. We are nearly of the same stable.

D I A L O G U E V.

Of the Methods of losing and preserving LIBERTY
and of THEOCRACY.

B.

MR. A. you seem to be a very profound Englishman, how do you imagine that all those governments were established whose names are so numerous as scarce to be retained; monarchic, despotic, tyrannic, oligarchic, aristocratic, democratic, anarchic, theocratic, diabolic, and others which are composed out of all these?

C. Yes; every one makes his romance, because we have no true history. Tell us, Mr. A. what is your romance?

A. Since you desire it, I will lose my time in talking to you as you will yours in hearing.

I imagine first two little nations, neighbours, composed each of about one hundred families, are separated by a brook and cultivate a good soil, for the fertility of the earth must be the cause of their fixing on the particular spot.

As each individual has equally received from nature two arms, two legs and a head, it seems impossible to me that the inhabitants of this little canton should not at first have been equal. And as the two nations are separated by a brook, it seems to me impossible but they must be enemies; for there will necessarily have happened

pened some difference in their manner of pronouncing the same words. The inhabitants to the southward of the brook, will most assuredly have derided those to the northward, and such affronts are not pardoned. There must be a great emulation between the two villages; some girl or woman may have been carried off. The young people must have occasionally fought with fists, sticks and stones. Things thus far being equal on both sides, he who passes for the strongest, and most active of the village of the north, says to his companions, if you will follow me, and do what I order, I will make you masters of the southern village. He speaks with so much assurance, that he obtains their suffrages. He makes them take better arms than the opposite people. Till now, says he to them, you have fought only in the open day, but you must attack your enemies while they sleep. This notion seems a great effort of genius to the northern mob; they attack their enemies in the night, kill some of the sleeping inhabitants, and maim others, (as Ulysses and Rhesus nobly did formerly,) take away the girls and the rest of the cattle; after which, the victorious brigade necessarily quarrel about sharing the spoils. It is natural that they should refer to the chief whom they have chosen to direct this heroic expedition. Thus then he is established captain and judge. The invention of surprising, robbing, and killing the neighbours, has impressed terror on the south, and respect on the north.

This new chief passes in the country for a great man, it becomes customary to obey him, and still more customary for him to command. I believe this may be the origin of monarchy.

C. It is true that the great art of surprising, killing and robbing, is a piece of heroism of the highest antiquity. I do not find any stratagem of war in Frontin, comparable to that of the children of Jacob, who came in fact from the north, and who surprised, killed and robbed the Sichemites who dwelt to the south. It is a rare example of sound politics and sublime valor. For the son of the king of Sichem was violently in love

with Dinah, the daughter of the patriarch Jacob, who, being at the age of six years at most, was already marriageable; and the two lovers being put to bed together, the children of Jacob proposed to the king of Sichem, the prince his son, and all the Sichemites, to become circumcised, that they might be but as one people; and as soon as the Sichemites having cut off their prepuces were gone to bed, two patriarchs, Simeon and Levi, alone surpris'd and killed all the Sichemites, while the ten other patriarchs robbed them. This nevertheless does not fall in with your system; for it was the surpris'd, killed and robbed, that had a king, and the assassins and thieves were yet without one.

A. The Sichemites apparently had performed some such happy exploit formerly, and their chief was become a monarch. I conceive that there have been robbers with chiefs, and other robbers without chiefs. The Arabians of the desert, for example, were almost all republican robbers; but the Medes and Persians were monarchic robbers. Without discussing the affairs of the prepuces of Sichem, or the robberies of the Arabs, I have the notion that offensive war has made the first kings, and defensive the first republics.

A chief of robbers, such as Dejoces, if he ever existed, or Cosrou, named Cyrus, or Romulus the assassin of his brother, or Clovis another assassin, Genferic, Atela, made themselves kings; the people who dwelt in caverns, islands, marshes, mountains or rocks, preserved their liberty, as the Swiss, the Grisons, the Venetians, the Genoese. We see that formerly the Tyrians, the Carthaginians and the Rhodians, preserved theirs so long as they could not be annoyed by sea. The Greeks were long free in their mountainous country; the Romans on their seven hills made themselves free, and deprived many nations of liberty, by surprising, killing and robbing them as we have already said. And in short, the earth is every where in the hands of the strongest and most skilful people.

In proportion as understandings became refined, governments were treated like stuff, in which the ground,
the

the designs, and the colours may be varied. So the the monarchy of Spain is as different from that of England as its climate. That of Poland does not at all resemble England. The republic of Venice is the contrary to that of Holland.

C. All this is palpable, but among so many forms of government it is very certain that there has never been a theocracy.

A. That is so true, that theocracy is still every where, and that from Japan to Rome they will shew you laws that emanated from God himself.

B. But these laws are all different and contradict each other. Human reason may very well be unable to comprehend that God has descended to earth, to order both sides of a proposition, to command the Egyptians and Jews never to eat pork after having been circumcised, and to leave us at liberty in both the one and the other. He could not forbid the eel and the hare in Palestine, and permit the hare to be eaten in England, and commanding the use of the eel to papists on fast days. I confess I tremble to examine into the matter for fear of finding contradictions.

A. Granting this, do not physicians order contrary remedies in the same disorders? The one orders the cold bath, the other the hot, this bleeds, another purges, and another kills. A new comer poisons your son, and becomes the oracle of your grandson.

C. That is curious. I would wish to know, excepting Moses and the other really inspired men, the first impudent man who presumed to make use of the authority of God.

A. I take him to have been a composition of fanaticism and knavery. Fraud alone was not sufficient. Fraud deceives, but fanaticism subjugates. It is probable, says one of my friends, that this business began by dreams. A man of a heated imagination dreams he sees his father and mother dying, they are both old and infirm, and consequently die; the dream is accomplished, and thus he becomes persuaded that God hath spoken to him in a dream. If he be but audacious and crafty,
which

which are no uncommon qualifications, he sets about predicting in the name of God. He observes, that in a war, his countrymen are fix to one, and foretells their success on condition of sharing a tenth of the booty.

This is an advantageous business; one quack therefore educates others who have the same interests as himself. Their authority increases with their number. God reveals to them that the best pieces of mutton and beef, the fattest poultry, and the first running of the wine belongs to them.

The priests eat roast beef, and the people starve.

The king of the country immediately makes a bargain with them, in order to be better obeyed by the people; but the monarch is soon the dupe of the treaty: the quacks use the power the monarch has given them over the rabble, to enslave himself. The monarch kicks, and the priests depose him in the name of God. Samuel dethrones Saul, Gregory VII. dethrones the emperor Henry IV. and deprives him of the right of sepulture. This diabolico-theocratico system endures till princes arise who are sufficiently enlightened, and have wit and courage enough to cut the nails of the Samuels and the Gregories. Such it seems to me is the history of mankind.

B. Reading is not necessary to judge that things must have taken this course. No more is necessary than to view with attention the populace of a country town in which there are two convents of monks, some enlightened magistrates, and a commandant of good sense. The people are always ready to croud round the cordeliers and capuchins. The commandant wishes to restrain them. The magistrate, angry with the commandant, makes an *arrêt* which curbs a little the insolence of the monks, and the credulity of the people. The bishop is still more angry that the magistrate has interfered in a divine piece of business. And the monks remain in power till a revolution shall abolish them.

Hominum mores tibi nosse volenti

Sufficit una domus.————

DIALOGUE

D I A L O G U E VI.

Of Three Kinds of GOVERNMENT and a Thousand ancient ERRORS.

B.

NOW to the matter in hand. I must confess I like a democratical government very well. I find that philosopher wrong, who said to one who favoured a popular government, *begin by putting the scheme in execution in your own house, and you will quickly repent.* With his leave, a house and a city are two things very different. My house is mine, my children are mine, my domestics while I pay them are mine; but by what right do my fellow citizens belong to me. All those who have possessions in the same territory, are equally entitled to maintain order in the same territory. I love to see freemen themselves make the laws they live under, as they have built the houses they live in. It is a pleasure to me to observe my mason, my carpenter, my smith, who have assisted me in building my house, or my neighbour the farmer, elevate themselves above their business, and become better acquainted with the public interest, than the most insolent chiaoux of Turkey. No labourer or artizan in a democracy need fear vexation and contempt. No one is in the situation of the hatter, who presented his request to the Duke to be paid for his goods—Have you received nothing on account, my friend?—I beg pardon, my lord, I received a box on the ear from your intendant.

It is very agreeable not to be dragged to a jail for being unable to pay to a man we know not, a tax, whose value, cause, and even existence are doubtful.

To be free, to have none but equals, is the true and natural life of man. Every other plan is an unworthy artifice, a bad comedy, in which one plays the part of master, another of slave, another parasite, and another

pimp. You must allow that men cannot stoop beneath their natural state but by baseness and folly.

C. That is clear; no person can have lost his liberty but by his not knowing how to defend it. There are two methods of losing it, the one is when fools have been deceived by designing men, and the other is when the weak have been subdued by the strong. People talk of certain conquerors, who having overcome another nation, caused every one to put out an eye; there are people whose eyes are both put out like the old horses that turn in a mill. I wish to keep my eyes. I imagine that the aristocratic state puts out one, but the monarchic two.

A. You speak like a North-Hollander, and I forgive you.

C. For my part, I give the preference entirely to Aristocracy: the people is unworthy of governing. I cannot allow my peruke-maker to be a legislator. I would rather go without a peruke for ever. Those only who have received a very good education are capable of directing those who have had none. The government of Venice is the best, and is the most ancient aristocracy in Europe. Next to it I place the government of Germany. Let me be either a noble Venetian or a count of the empire. I declare that I cannot live with pleasure but upon the one or other of these conditions.

A. You are rich Mr. C. and I very much approve your manner of thinking. I perceive you would be for the Turkish government if you were emperor of Constantinople. For my part, though I am no more than a member of the British parliament, I regard the constitution of my country as the best of any, and to confirm my testimony I shall quote an indisputable evidence, namely, that of a Frenchman, who in a poem consecrated to truth and not to vain factions, speaks thus of our government,

Aux murs de Westminster on voit paraître ensemble
Trois pouvoirs étonnés du nœud qui les ressemble

Les

Les députés du peuple, & les grands, et le roi.

Divisés d'intérêt réunis par la roi.

Tous trois membres sacrés de ce corps invincible

Dangereux à lui-même, à ses voisins terrible.

C. Dangereux à lui-même! You must then have great abuses among you.

A. Without doubt; in the same manner as it happened among the Romans and the Athenians, and always will among men. The utmost point of human perfection is to have power and happiness, together with enormous abuses. It is dangerous to eat too much; yet nevertheless I wish to have my table plentifully served.

B. Shall we have the pleasure of minutely examining all the governments of the earth, from the Chinese emperor Hiao and the Hebrew Horde, down to the last dissensions of Ragusa and Geneva?

A. God preserve me! This would be like examining the books of other people, in order to settle my own accounts. Many people who were incapable of governing a servant, have attempted to govern the universe with their pen. Would you wish to lose our time by reading together the Book of the Politics of Holy Scripture, written by Bossuet, archbishop of Meaux. How pleasing must the politics be of a wretched people who were sanguinary though not warlike, usurers without commerce, robbers without the valour necessary to preserve their rapine, continually in slavery, and continually in rebellion, sold at market by Titus and by Adrian, like the animal which they term unclean, but which is nevertheless more useful than them. Let us abandon to the declaimer Bossuet the politics of a people who were skilful only in assassination; to begin with their David, who having taken up the trade of a robber in order to become king, assassinated Uriah as soon as he became master; and the wise Solomon, who began his reign by assassinating his own brother Adonijah, at the foot of the altar. I am disgusted at the absurd pedantry

which can consecrate the history of such a people to the instruction of youth.

I am not less disgusted with those books which repeat the fables of Herodotus and others concerning the ancient monarchies of Asia and republics which have long since disappeared.

Let them tell us that one Dido, pretended sister of Pygmalion (which are not Phœnician names) fled from Phœnicia to purchase as much land as might be contained in an ox's skin, and that by cutting this skin into thongs she enclosed an immense territory, in which she founded Carthage; let these lying historians speak one after the other, of the oracles of Apollo accomplished, the ring of Gyges, the ears of Smerdis, and the horse of Darius who made his master king of Persia; let them enlarge on the laws of Charondas; let them repeat that the little city of Sibaris sent three hundred thousand men into the field against the little town of Crotona which was able to arm no more than one hundred thousand men—and after all we must place these narrations in the same class with the wolf of Romulus and Rhemus, the Trojan horse and the whale of Jonas.

There let us leave all the pretended ancient history: and with respect to the modern, let every one endeavour to instruct himself by the errors which prevail in his own or the neighbouring countries; and the lesson will be long enough: but let us likewise attend to all the happy institutions by which modern nations signalize themselves: this lesson will also be long.

B. And what shall we learn from thence?

A. That life is the more supportable in proportion as all the laws of convention approach to the laws of nature.

C. Let us see then.

DIA-

D I A L O G U E. VII.

That Modern EUROPE is superior to Ancient EUROPE.

C.

ARE you hardy enough to maintain that you English are superior to the Athenians and Romans, that your cock matches and bear garden gladiators are superior to their amusements? are the cobblers and buffoons who have parts in your tragedies, superior to the heroes of Sophocles? do your orators eclipse Cicero and Demosthenes? and, in short, is the internal regulation of London superior to that of ancient Rome.

A. No: but London is ten thousand times superior at present to what it was then, and the case is the same with the rest of Europe.

B. Nay, I beg you'll except Greece which is subject to the great Turk, and that unhappy part of Italy which obeys the pope.

A. I do except them: but please to remember that Paris which is only one-tenth part less than London, was then no more than a little barbarous city. Amsterdam was a marsh, Madrid a desert; and all was savage from the Rhine to the gulph of Bothnia: the inhabitants of these countries lived as Tartars have always lived, in ignorance, want, and barbarism.

Do you think it a small matter that there are philosophers at present on the throne at Berlin, Sweden, Denmark, Poland and Russia, and that the discoveries of our great Newton are become the catechism of the nobility of Moscow and Petersburg?

C. You must allow that it is not the same on the banks of the Danube; the light is come from the north; for you are a northern people, with respect to me who was born under the forty-fifth degree of latitude. But have all these discoveries made you happier

than you were when Cæsar landed in your isle and found you half naked.

A. I sincerely believe it; good houses, good clothes, good provisions, with good laws and liberty are much better than want, anarchy and slavery. They who dislike London need only go to the Orkneys. They will live there as we lived at London in the time of Cæsar; they will eat oat-bread, and may cut one another's throats for a fish dried in the sun or a cabin built of straw. Savage life has its charms, they who commend it so much, need only give the example by embracing it.

B. They would at least live under the law of nature. Pure nature knows nothing of debates in parliament, nor the prerogatives of parliament, nor the India company, nor land, nor window tax. It is very possible for you to have corrupted nature; but nature is unaltered in the Orkneys and among the Topinambos.

A. Suppose I should tell you that the savages have corrupted nature and that it is we who follow her dictates.

C. You astonish me! what is it following nature to consecrate an archbishop of Canterbury? to call a German transplanted among you, *your majesty*! to be capable of marrying no more than one woman? and to pay annually more than one-fourth of your revenue? without mentioning many other transgressions against nature which I omit to speak of.

A. Yet I can prove it, or I am exceedingly deceived. Is it not certain that instinct and judgment, the two eldest children of nature, teach us in every thing to seek our own welfare and to promote that of others when it evidently coincides with our own? is it not true that if two old cardinals, fasting and hungry, were to meet each other under a fig tree, they would mechanically assist each other to climb the tree and gather the fruit; and would not two rogues of the black forest or Chicacas do the same?

B. Well, and what do you conclude from thence?

A. I

A. I make the same conclusion as that which was made by these two cardinals and two rogues; namely, that in every similar case, we ought naturally to assist each other. They who assist society the most will be those who follow nature the nearest. They who shall invent the arts, which invention is a great gift from God, and they who shall propose laws, which is a thing infinitely more easy, will be those who have best obliged the dictates of nature; therefore, the more the arts shall be cultivated and property made secure, the more in fact the law of nature will have been observed. Consequently, when we agree to pay three shillings in the pound in order to enjoy the other seventeen with greater security; when we agree to chuse a German to be under the title of king, the preserver of our liberty, the arbitrator between the lords and commons, and the chief of the republic; when from motives of œconomy and to preserve domestic peace we marry but one wife; when we allow, since we are rich, an archbishop of Canterbury to have an annual income of twelve thousand pounds, to assist the poor, to preach virtue if he knows how to preach, to promote peace among the clergy, &c. &c. then we do more than bringing the law of nature to perfection; we even exceed the mark. But the brute and solitary savage, if there be such an animal on earth, which I very much doubt, what does he do from morning till night, but pervert the law of nature by being useless to himself and all mankind?

A bee which should make neither honey nor wax, a swallow which should not make its nest, an hen which should never lay eggs, would counteract that instinct which is their law of nature. Unsocial men counteract that instinct which is the law of human nature.

C. So that the man who is disguised under the wool of sheep, or the excrement of silk worms, inventing gunpowder to destroy his species, and going two thousand leagues from home to contract a nauseous disorder, is the natural man, while the naked Brazilian is the artificial man?

A. No:

A. No: but the Brazilian is an animal who has not yet arrived at the complete attributes or faculties of his species. He is like a bird which has its feathers very late, a caterpillar enveloped in its skin which will not become a butterfly till after some ages. Brasil may one day possess its Newtons and its Lockes, and the extent of the human career will then be completed, supposing the organs of the Brazilian to be sufficiently strong and pliable to arrive at this eminence: for every thing depends on the organs. But after all, what signify the character of a Brazilian and the sentiments of a Topinambou to me? I am neither the one nor the other, and am desirous of being happy at home my own way. We ought to examine the state in which we are, and not the state in which we never can be.

D I A L O G U E VIII.

B.

EUROPE seems to me at present to resemble a great fair. We find every thing which is supposed necessary to life. There are watchmen to guard the magazines; cheats who win the money of fools at dice; pretended beggars who supplicate charity, and puppet shews in the squares or market places.

A. All this is convention as you see; and these conventions of the fair, are founded on the wants of man, on his nature, on the developement of his understanding, on the first cause which gives motion to second causes. I am persuaded that it is the same in a republic of ants. We continually see them at work, without discovering with any precision what they are about; they seem to run about without design; perhaps they think the same of us; they keep their fair as we do ours. For my part, I am not absolutely displeased with my booth.

C. Among the conventions which displease me in this great fair of the world, there are two in particular which disgust me; namely, the sale of slaves and the quackery of certain professions which sell their nostrums
much

much too dear. Montesquieu, has diverted me very much in his chapter concerning negroes. He is very comic, he triumphs in diverting himself with our injustice.

A. In reality we have no natural right to go and bind a citizen of Angola in order to compel him by stripes to work in our plantations at Barbadoes, tho' we have a natural right to lead a dog whom we have fed, to the chace. But we have the right of convention. Why is this negro sold? or why does he suffer himself to be sold? I have bought him; he belongs to me; what injury have I done him? he works like a horse, is clothed and fed badly, and is beat when he disobeys; is this any thing so surprizing; do we treat our soldiers better? have they not as absolutely lost their liberty as this negro? the only difference between the negro and the warrior is, that the warrior costs much less. A good negro, at present, costs at least five hundred crowns, and a good soldier scarce fifty. Neither the one nor the other can leave the place of his confinement, and both are beaten for the least fault. The salary is nearly the same; and the negro has the superior advantage of not risking his life and of passing his spare hours with his wife and children.

B. What! do you then believe a man can sell his liberty, which is without price?

A. A bargain's a bargain. So much the worse for him if he sells so precious a thing too cheap. You may say he is to blame but do not say I cheat him.

It seems to me that Grotius very much approves of slavery. (Lib. ii. cap. 5,) he even finds the condition of a slave much more advantageous than that of a day labourer who is not always sure of bread.

B. But Montesquieu seems to regard slavery as a kind of sin against nature. Behold here a free citizen of Holland who admits of slavery, and a Frenchman who opposes it: he does not even admit the right of war.

A. And what other right can there be in war but that of the strongest? Suppose I were in America, engaged in an action against the Spaniards. A Spaniard has

has wounded me, and I am ready to slay him. He says brave Englishman do not take my life and I will be your slave. I accept the proposition, I do him this favor; I feed him with garlick and onions, and he reads Don Quixote to me every evening; pray what wrong is there in this? If I had given myself up to a Spaniard on the same condition, would it have been in my power to have reproached him? The emperor Justinian observes, that a bargain can be made only with those things which the parties possess.

Does not Montesquieu himself confess that there are people in Europe among whom it is common for people to sell themselves, as for example the Russians?

B. It is true that he affirms it (Liv. xv. Chap. vi.) and that he quotes Capt. Jean Perri in his present state of Russia; but he quotes after his usual manner. Jean Perri says precisely the contrary: these are his words: "The Czar has commanded that no one in
" future shall call himself his slave, his golup; but
" only raab which signifies subject. It is true that the
" people derive no real advantage from hence, for they
" are slaves to this day."

In fact, all the cultivators or inhabitants of lands belonging to boyards or priests are slaves. If the empress of Russia should give freedom to mankind, she will render her name immortal.

In short, to the disgrace of humanity, the husbandmen, the artists and the common people who are not inhabitants of great cities are to this day slaves attached to the land in Poland, Bohemia, Hungary, in many provinces of Germany, in half the extent of Franche-Comté, and in one fourth of Burgundy; and what is yet more contradictory is that they are slaves to priests. There is a certain bishop who has scarce any but slaves or villains in his territory. Such is the humanity and charity of christians. As to slaves made during war, the christian gallies of the religious knights of Malta are manned only by Turkish prisoners or Africans who are chained to the oar.

A. On my conscience, if the bishops and religious have slaves, I will have them likewise.

B. It would be better that nobody had them.

C. This event will infallibly happen when the perpetual peace of the Abbé de St. Pierre shall be signed by the grand Turk and all the other powers; when the city of arbitration shall be built near the perforation which is to be made to the center of the earth for the purpose of knowing precisely how to act at the surface.

D I A L O G U E IX.

Of the Slavery of the Mind.

B.

IF you admit of the slavery of the body, you will no less admit of the slavery of the mind?

A. Let us understand each other if you please. I do not admit of the slavery of the person as one of the principles of society; I only say that it is better for one vanquished in battle to become a slave than to be killed, provided he prefers life to liberty.

I say that the negro who sells himself is a fool, and that the father who sells his child is a barbarian; but I am a man of sense in buying this negro and causing him to work in my sugar mills. It is my interest that he should enjoy health, in order that he may work. I shall be kind to him, and require no more gratitude from him, than from my horse, to whom I must give hay and oats, if I wish him to serve me. I am nearly the same to my horse, as God is to man. If God hath created man to live a few minutes in this stable of the earth; it is very necessary to procure him food: for it would be absurd to have made him a present of a good stomach and no provisions.

C. But suppose your slave to be useless?

A. Doubtless I would give him his liberty, if he were to think of becoming a monk.

B. But

B. But what do you think of the slavery of the mind?

A. What do you call the slavery of the mind?

B. I mean the custom which has obtained of bending and warping the minds of our children, as the Caribbee women mould the heads of theirs, of teaching them to gabble out pieces of nonsense which we ourselves despise; to make them believe these absurdities as soon as they are capable of believing any thing; to take every possible care to render a nation idiots, fools and cowards; in short to establish laws which prevent mankind from reading, speaking or even thinking; like Arnolphe in the comedy, who allowed neither pen nor ink in his house excepting for himself, and wished to make Agnes silly and weak in order to enjoy her.

A. If laws like these were in force in England, I would either enter into a conspiracy to abolish them or fly my country for ever.

C. Yet it is not very proper that every one should speak his thoughts. We ought neither by writing nor discourse to insult those powers and laws by which we are protected in the enjoyment of our fortune, our liberty, and all that is estimable in life.

A. Doubtless we ought not; the seditious and rash ought to be punished; but ought we to forbid men the use of writing because it is in their power to abuse it? I would as soon think of rendering you dumb to prevent your using bad arguments. People rob in the streets, ought we for that reason to forbid walking? Silly and injurious things are said; ought we therefore to interdict the use of speech? Every one, with us, may write what he thinks, at his own risque and peril; it is the only method of speaking to the people. If they find you have spoken ridiculously they hiss, if seditiously you are punished, and if wisely and nobly you are esteemed and rewarded. The liberty of speaking to man with the pen is established in England, in Poland, in the United Provinces, and at length in Sweden, which imitates us, and it ought to be in Switzerland which without this liberty does not deserve to be free. There

is

is no liberty among men, without the liberty of expressing one's thoughts.

C. Suppose you had been born in modern Rome?

A. I would have erected an altar to Cicero and Tacitus. I would have mounted on this altar, and with the cap of Brutus on my head and his poignard in my hand, I would have recalled the people to those natural rights which they have lost. I would have re-established the tribunal like Nicolas Rienzi.

C. And you would have made the same finish as he did.

A. Perhaps so; but I cannot express to you the horror which the slavery of the Romans inspired me with during my last voyage, I shuddered to see the recollets in the capitol. Four of my countrymen have hired a vessel to go and take drawings of the useless ruins of Palmira and Balbec. I have been tempted an hundred times to arm a dozen at my own charge, to go and lay in ruins the haunts of the inquisitors, in those countries where man is enslaved by these monsters. Admiral Blake is my hero. Being sent by Cromwell, to sign a treaty with John of Braganza king of Portugal, this prince excused himself from signing the treaty, because the grand inquisitor would not allow him to treat with heretics. Let me manage him, replied Blake, he shall come and sign the treaty on board. The palace of this monk was on the Tagus, opposite our fleet. The admiral gave him a salute of red hot bullets; and the inquisitor came on board to beg pardon and sign the treaty on his knees. The admiral did only half what he ought to have done; he ought to have forbade all inquisitors from tyrannizing over the souls, and burning the bodies of men, as the Persians and after them the Greeks and Romans forbade the Africans to sacrifice human victims.

B. You speak like a true Englishman.

A. I speak like a man, and as all men would speak if they durst. Shall I tell you what is the greatest defect in human nature.

C. You will do me a pleasure: I am very desirous of knowing my species.

A. This

A. This defect is to be a fool and a coward.

C. Yet all nations shew courage in war.

A. Yes; like horses which tremble at the first beat of the drum, but which advance fiercely when they are disciplined by an hundred beats of the drum and an hundred strokes of the whip.

D I A L O G U E X.

On R E L I G I O N.

C.

SINCE you think it the part of a man of courage to explain his thoughts freely, you wish then that the liberty of publication should be allowed in every thing which affects government and religion.

A. He who is silent on these subjects is a base wretch who has not courage enough to look steadily at these two poles of human life. If we had not written we should have been oppressed by James II. and his chancellor Jeffries, and his lordship of Canterbury would have whipped us at the gate of his cathedral. The pen was the first defence against tyranny, and the sword the second.

C. What! write against the religion of one's country?

B. But you don't recollect, Mr. C. that if the first Christians had not been allowed to write against the religion of the Roman empire, they could never have established their own. They fabricated the gospel of Mary, of James, of the Infancy, of the Hebrews, of Barnabas, of Luke, of John, of Matthew, of Mark, to the number of fifty-four. They composed letters of Jesus to a petty king of Edeffa, of Pilate to Tiberius, of Paul to Seneca, and the prophecies of the Sibyls in acrostics, the creed of the twelve apostles, the testament of the twelve patriarchs, the book of Enoch, five or six apocalypses, false apostolical constitutions, &c. &c. In short, what have they not done in the way of writing? And why would you deny us the liberty they possessed so largely?

C. God

C. God preserve me from proscribing this precious liberty ; but I wish for that kind of decency which prevails in the company of polite people. Every one speaks his sentiments ; but no one insults the company.

A. Neither do I require that society be insulted but enlightened. If the religion of the country be of divine origin, which is that on which every country piques itself, an hundred thousand volumes will do it no more injury than an hundred thousand snow balls against a wall of brass ; the gates of hell shall not prevail against it as you know ; how then can certain black characters traced on white paper destroy it ?

But if fanatics or people of no principle, or men who possess both these qualities at the same time, have corrupted a pure and simple religion ; if the magi and bonzés have added ridiculous ceremonies to the divine law, silly mysteries to the divine morality of Zoroaster and Congfutzée, ought not mankind to be grateful to those who shall cleanse the temple of God from the ordure which these wretches have heaped up within it ?

B. You seem to be very learned ; what are these precepts of Zoroaster and Congfutzée ?

A. Congfutzée says, do not that unto other men which you would not be willing to have done to yourself.

He says, do as you would be done by, forget injuries and remember benefits. He makes a duty of friendship and humility.

I shall quote no more than a single law of Zoroaster, which comprehends the purest morality, and is exactly the contrary to the famous *probabilism* of the Jesuits.

When thou art in doubt whether an action be good or evil, abstain from doing it.

No moralist, no philosopher, no legislator has ever said any thing which can exceed this maxim. If after this, the Chinese or Persian doctors have added to the adoration of one God and the doctrine of virtue, fantastic chimeras of apparitions, visions, prodigies, predictions, possessions, scapularies ; if they have thought proper that we should in honor of Zoroaster and Congfutzée, eat only of certain things ; if they have pretended to be in-

structed

structed in all the family secrets of these great men ; if they have disputed three hundred years to determine how Congfutzée was made or engendered ; if they have instituted superstitious practices, in order to draw the money of devout people into their own pockets ; if they have established their temporal grandeur on the folly of these devotees ; if, in short, they have armed fanatics to support their inventions by fire and the sword, there can be no doubt of the propriety of quelling and suppressing these impostors. Whoever has written in favour of the natural and divine religion, against the detestable abuses of sophistical worship, has been the benefactor of his country.

C. These benefactors have often been badly recompensed. They have been burnt or poisoned, or hanged ; and every reformation has produced wars.

A. It was the fault of the legislature. There have been no more religious wars since governments have been wise enough to discourage theology.

B. For the honor of reason, I wish it were abolished instead of discouraged ; it is too shameful to have made a science of this grave folly. I know the use of a curate who keeps a register of births and deaths ; who receives alms for the poor, who comforts the sick, and establishes peace in families ; but what are theologians good for ? What good results to society from the knowledge that an angel is infinite, *secundum quid*, that Scipio and Cato are damned for not having been Christians, and that there is an essential difference between catagorematic and sincatagorematic.

Do not you admire Thomas Aquinas, who decides that the *irascible and concupiscible parts are not parts of the intellectual appetite*. He examines at full length whether the ceremonies of the law are before the law. A thousand pages are employed in these excellent questions, and five hundred thousand men study them !

The theologians have spent much time in the enquiry, whether God could become a pumpkin or an insect, if after receiving the eucharist it be voided at the house of office.

These extravagancies have employed bearded sages, in countries which have produced great men; on this account a writer, who is a friend to reason, has many times said that our great misfortune is, that we do not yet know how far we are beneath the Hottentots in certain matters.

In many arts we have gone beyond the Greeks and Romans, and in this respect we are brutes; like those animals of the Nile, one part of which was alive, while the other was as yet only mud.

Who would believe it? A fool after repeating every piece of scholastic nonsense for two years, receives his cap and bells with ceremony, and struts and decides on every subject; and it is this school of Bedlam which lead to honors and riches; what can be said to it? Thomas and Bonaventure have their altars, and they who have invented the plough, the saw, and the plane, are not even remembered!

A. It is absolutely necessary to destroy theology as well as judicial astrology, magic, the divining rod, the cabal and the silken chamber.

C. Let us destroy the caterpillars as much as we can in our garden, but preserve the nightingales; let us preserve the useful and agreeable, 'tis the whole man; but as to the disgusting and venomous part, I consent to its extermination.

A. It is necessary that we should have a good and rational religion established by act of parliament, and dependant on the king, and let us tolerate all others. We have not been happy till we became liberal and tolerating.

C. I read the other day, a French poem concerning grace, a didactic and rather soporific poem, not to mention that its music is monotony. The author, in speaking of England, to which the grace of God is denied, notwithstanding your king, calls himself king by the grace of God, as well as others. This author, I say, expresses himself thus in verses, which are insipid enough:

Cette isle de Chrétiens féconde pépinière
L'Angleterre où jadis brilla tant de lumière

VOL. I.

E c

Recevant

Recevant aujourd'hui toutes religions
 N'est plus qu'un triste amas de folles visions.—
 Oui, nous sommes, Seigneur, tes peuples les plus chers
 Tu fais luire sur nous tes rayons les plus clairs
 Verité toujours rare! O doctrine eternelle!
 La France est aujourd'hui ton royaume fidèle.

A. This is a pleasant original with his *pepiniere* and his *rayons clairs*! a Frenchman always thinks he ought to give the fashion to other nations. It seems as if he were speaking of a minuet or a new fashion. He deplores our misfortune in being free; in what respect pray is France the *royaume fidèle de la doctrine eternelle*? Was it at the time when a ridiculous bull, fabricated in a college of Jesuits at Paris, and sealed at Rome by a college of cardinals, divided all France, and made more prisoners and exiles than she had soldiers? O the faithful kingdom!

Let the church of England answer this rhymers of the French church if they please. For my part, I am sure that no one among us will regret those times, *in which so much radiance shone forth*. Were those the times of radiance and light, when the popes sent legates among us to give our benefices to Italians, and to take the tythe of our goods to pay their mistresses? When the three kingdoms swarmed with monks and miracles? This tame poet is a bad citizen. He ought rather to wish his country a sufficient quantity of radiance, to see how much she would gain by imitating us; this *radiance* makes it appear unnecessary, that the French should yearly send twenty thousand pounds sterling to Rome, and shews, that the English, when they formerly paid the *Peter-pence*, were plunged in a state of the most stupid barbarity.

B. You speak much to the purpose. Religion does by no means consist in sending one's money to Rome. This truth is acknowledged, not only by those who have shaken off the yoke, but by those who are still subject to it.

A. All

A. All Europe cries out that a reformation in religion is absolutely necessary. It is near two hundred years since this grand work was began; but men are not enlightened but by degrees. Who would then have believed that the rays of light would in future be analysed, that the thunder should be by men conducted from heaven, or that gravitation, the universal law which presides over the universe, should be discovered! It is time that men so enlightened should no longer be slaves to the blind. I laugh when I see an academy of sciences obliged to conform to the decisions of a congregation of the holy office.

Theology has never served to any purpose, but the distracting of men, and sometimes of whole states. Theology alone makes atheists; for of the great number of petty theologians who have sense enough to discover the ridicule of this chimerical study, there are few who are capable of substituting a sound philosophy in its room. Theology, say they, according to the signification of the word, is the *knowledge of God*: now the fools who have profaned this science, have given absurd ideas of God, and from thence they conclude that God is a chimera, because theology is chimerical. This is precisely as if one should affirm, that we ought not to take quinquina in the fever, nor follow a regimen in a plethora, nor bleed in the apoplexy, because there are bad physicians. It is to deny the courses of the stars, because there have been astrologers; it is to deny the evident effects of chemistry, because quacks have pretended to make gold. People of the world, yet more ignorant than these petty theologians, cry, here are batchelors and licentiates who do not believe in God, why therefore should we?

My friends, it is false science which makes men atheists; true science prostrates them before the divinity. She makes those just and wise whom theology has rendered wicked and senseless. This is nearly what I have read in a small treatise lately published, and is my confession of faith.

B. And in fact it is that of every honest man.

D I A L O G U E XI.

Of the RIGHT of WAR.

B.

WE have discoursed about matters which concern us all very nearly; and men are very senseless to prefer the chace or piquet, to the instructing themselves on objects of such importance. Our first design was to enquire into the right of war and peace, but we have not yet spoken of that matter.

A. What do you understand by the right of war?

B. You embarrass me; but at length De Groot or Grotius has composed a large treatise in which he quotes more than two hundred Greek, Latin and even Jewish authors.

A. Do you believe that prince Eugene and the duke of Marlborough had studied it when they came to chace us out of an hundred leagues of country? I am well enough acquainted with the rights of peace; they consist in keeping one's word and leaving every man in possession of the rights of nature; but as to the right of war I don't know what it is. The code of murder seems to me a strange fancy. I hope we shall shortly have the laws and rights of robbers on the highway.

C. How shall we reconcile that so ancient and universal horror of war with the ideas of just and unjust? with that regard for our fellow creatures which we pretend is born with us? with the *to Kalon*, the beautiful and the honest?

B. Not so fast. This crime, which consists in the commission of a great number of crimes, is not so general as you imagine. We have already remarked that the Bramins and those primitive christians called Quakers have never been guilty of this abomination. The nations which are situated beyond the Ganges seldom
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shed blood; and I have not heard that the republic of St. Marino ever made war, tho' it possesses almost as much territory as Romulus did. The people near the Indies and the Hydaspes were exceedingly surpris'd to see the first armed robbers who came to deprive them of their country. Many people of America had not even heard of this horrible crime till the Spaniards came to exterminate them with the gospel in their hands.

It is not said that the Canaanites were ever engaged in war till the sudden appearance of the Jewish horde who laid their villages in ashes, cut the throats of their women on the dead bodies of their husbands, and children in the laps of their mothers. How can we explain this rage upon our principles?

A. In the same manner as physicians give an account of the plague, the lues, and madness. There are diseases attacked to the constitution of our organs, we are not always attacked with madness or the plague. Nothing more is necessary in general than for one mad minister of state to bite another, and in three or four months the madness is communicated to four or five hundred thousand men.

C. But there are remedies when we have those disorders. Do you know any for war?

A. I know but two, of which the tragedy has availed itself. Fear and pity. Fear often obliges us to make peace; and pity, which nature has placed in our bosoms as a kind of counterpoison to the heroism of carnage, will not always suffer us to treat the vanquished rigorously. It is even our interest to use them mercifully, that they may serve their new masters with the less regret. I know very well that there have been brutes who have made subjugated nations feel all the weight of their chains. To this I can only answer by quoting a verse out of a tragedy, entitled *Spartacus*, written by a Frenchman who thinks profoundly:

La loi de l'univers est malheur aux vaincus.

I have broken an horse: if I am wise, I nourish him well, I caress him and mount; if I am a passionate fool, I cut his throat.

C. There is no great consolation in that; for in short, we have almost all been subjugated. You English have been conquered by the Romans, the Saxons, and the Danes; and afterwards by a bastard of Normandy. The cradle of our religion is in the hands of the Turks. An handful of Franks overcame Gaul. The Tyrians, the Carthaginians, the Romans, the Goths, the Arabians have each in their turn subjugated Spain. On the whole, from China to Cadiz, the world has almost always belonged to the strongest. I know of no conqueror who came with a sword in one hand, and a code of laws in the other. No laws were made till after the victory, that is, after the plunder and rapine, and those laws were made for no other purpose than to support their tyranny. What would you say, if some bastard of Normandy were to come to take possession of England in order to give you laws?

A. I would say nothing; I would endeavour to slay him on his descent into my country: if he killed me, I should have no reply to make: if he subdued me, I should have but two things to chuse, either to kill myself or to submit.

B. These are sad alternatives. What! Is there no right of war, no law of nations?

A. I am sorry for it; but the only maxim is to keep continually on guard. All kings and ministers think like me; and for that reason twelve hundred thousand mercenaries parade in Europe every day, in time of peace.

Let a prince discharge his troops; let him suffer his fortifications to fall into ruin, and let him spend his time in reading Grotius, and you will see whether in a year or two he does not lose his kingdom.

C. That would be great injustice.

A. I grant it.

B. And is there no remedy for that?

A. None, except that of putting one's self into a situation of being as unjust as one's neighbours. Ambition is then restrained by ambition; then the dogs of equal strength shew their teeth, but do not tear each other, except when there is a bone to be disputed for.

C. But

C. But do you make no exception in favor of those great legislators the Romans.

A. They made laws I must inform you, as the Algerines have subjected their slaves to regulations; but when they fought to reduce nations into slavery, the sword was their law. Behold the great Cæsar! The husband of so many women, and the wife of so many men; he crucified two thousand citizens of the country of the Vannes to make the rest learn to be more complying. At last, when the whole nation is tamed, then come the law and wise regulations. Circus' and amphitheatres are built, aqueducts and public baths are constructed, and the conquered people dance with their chains.

B. Yet we nevertheless say, that war has its laws. For example, a truce is made for some days in order to bury the dead. People agree not to fight within a certain district. A capitulation is granted to a besieged city, and the bells are allowed to be redeemed. Women with child are not ripped up in a town which has yielded. You do favours to a wounded officer who has fallen into your hands, and if he dies you bury him.

A. Do not you observe that these are the laws of peace and of nature; the primitive laws which are reciprocally executed? War has not dictated them; they have extended themselves in spite of war; and but for them three-fourths of the globe would be no more than a desert covered with bones.

If two clients, who by their own eagerness and the chicane of their lawyers, were reduced to the verge of ruin, if these men were to make an agreement which should leave each of them a morsel of bread, would you call this agreement *a law of the bar*? If a horde of theologians going in ceremony to burn certain reasoners, whom they call heretics, should be informed that the heretical party will burn them to-morrow in its turn; if in consequence of this intelligence they were to shew that mercy which they wish to experience in themselves; would you call this lenity *a law of theology*? No, you would confess that they had listened to nature and their own interest in spite of theology. It is the same in war.

If they refrain from committing any particular outrages, it is their own interest and necessity which restrains them. War, I must inform you, is a frightful disorder which seizes nations one after the other, and which at length is cured by nature.

C. What! do you then deny the possibility of a just war?

A. I never knew of any such thing: it appears to me contradictory and impossible.

C. What! when pope Alexander VI and his infamous son Borgia robbed Romagne, and cut the throats of, or poisoned all the principal men, by granting them indulgences, was it not lawful to arm against these monsters?

A. Do not you observe that it was these monsters who made the war? They who defended themselves only supported it. There is certainly no such thing as an offensive war, and defensive war is no more than the resisting armed robbers.

C. You mock us. Two princes dispute concerning an inheritance, their titles are litigious, and their reasons equally plausible; war must decide it, and consequently, in this instance, the war is just on both sides.

A. It is you who mock. It is physically impossible but that one of the two must be in the wrong; and it is absurd and barbarous that nations should perish because one of these two princes has reasoned falsely. Let them fight in single combat if they chuse; but it is shocking that a whole people should be sacrificed to their interests; for example, the archduke Charles disputes the throne of Spain with the Duke of Anjou, and before the process is determined four hundred thousand men are slain. I wish to know if this be just?

B. I confess it is not. Some other means must be devised in order to reconcile this difference.

C. These means were already in being. It was necessary to refer it to the nation which is proposed to be governed. The Spanish nation said, we chuse the Duke of Anjou. The king his grandfather appointed him his successor by will, we have subscribed and acknowledged him

him for our king; we have intreated him to leave France and come and reign over us. Whoever chuses to oppose the laws both of the living and the dead is visibly unjust.

B. Very well. But suppose the nation divides itself into parties.

A. Then, as I told you, the nation and they which enter into the quarrel are infected with rage. The horrible symptoms of this disorder last for twelve years, till the mad wretches, being exhausted and incapable of doing more mischief, are compelled to a reconciliation. Accident, the mixture of good and bad success, intrigue and weariness, have extinguished this flame, which other accidents, other intrigues, avarice, jealousy, and hope had kindled. War is like mount Vesuvius; its eruptions swallow up villages, and then its burning ceases. There are times when wild beasts, descending from the mountains, devour a part of your labours, but they afterwards retire again into their caverns.

C. How unhappy is the state of man!

A. That of partridges is much worse. Foxes and birds of prey devour them, sportsmen kill them, cooks roast them, and yet the race remains in plenty. Nature preserves the species, but concerns herself very little with the individuals which compose it.

B. You are harsh. Morality is not reconcileable with these maxims.

A. I am not harsh. It is destiny which is so. You moralists may cry as much as you please “ Miserable
“ mortals be just and benevolent. Cultivate the earth
“ and do not pollute it with blood. Princes, do not
“ attempt to lay waste the inheritance of others lest
“ you should be slain upon your own. Remain at home,
“ ye poor country squires, rebuild your houses, cul-
“ tivate your lands and they will produce double; en-
“ close your fields with live hedges; plant mulberry
“ trees, that your sisters may make you silk stockings;
“ improve your vines; and if your neighbours come to
“ drink your wine by force defend yourselves with cou-
“ rage:

“ rage : but do not sell your blood to princes, who
 “ know you not, who will not even favour you with a
 “ look ; who lead you out as dogs are brought forth to
 “ hunt the wild boar and are afterwards left to die in a
 “ ditch ”

These discourses will perhaps make some impression on three or four well organised men, while an hundred thousand others will not even have heard of them, and will solicit for the honor of being made lieutenants of Hussars.

As to those other moralists who are called preachers, none of them have ever dared to preach against war. They declaim against the sensual appetites after taking their coffee. They anathematize love, and when they leave the pulpit in which they have roared, and sweat, they are wiped by their devotees. They labour to prove mysteries of which they have not the least idea. But they are careful not to decry war, which unites in its manifestos every thing which the vilest perfidy can suggest, which exhibits the basest knavery in the fitting out our armies, and which in its plunder, violation, theft, homicide, destruction, and devastation, affords every thing that is shocking in the most abandoned robberies. On the contrary, these good priests bless and consecrate the standards of murder; and their brethren, for the sake of money, chant Jewish songs when the earth has been covered with blood.

I do not recollect having read in the prolix and argumentative Bourdaloue, who is the first, who has admitted of the appearance of reason in his sermons; I do not recollect, I say, having read a single page against war.

The elegant and mild Neafillion in consecrating the colours of the regiment of Catinat, does make, it must be confessed, a few wishes for peace, but he allows of ambition, “ this desire,” says he, “ of seeing your
 “ services rewarded, if it be moderate, if it do not carry
 “ you into the paths of iniquity in order to obtain your
 “ purpose, has nothing in it by which christian mora-
 “ lity can be offended.” At last, he intreats God to send the exterminating angel before the regiment of Catinat, “ O my God, cause victory and death always

“ to

“ to go before them, let their enemies be afflicted with “ the spirits of terror and giddiness!” I do not know whether victory can go before a regiment, and whether God sends forth the spirits of giddiness; but I am sure the preachers of Austria, say as much to the cuirassiers of the emperor, and that the exterminating angel must be at a loss which to attend to.

The Jewish preachers went still farther. We are exceedingly edified at the humane prayers with which their psalms are filled. They make no scruple of girding on the divine sword, of ripping up women, and of dashing sucking children against the stones. The exterminating angel was not happy in his campaign, he became the exterminated angel; and the Jews in reward of their psalms were always vanquished and in slavery.

Turn on what side you will, and you will see that preachers have always encouraged carnage, from one Aaron who is pretended to have been the pontiff of an horde of Arabians, down to Jurieu the prophet of Amsterdam. The merchants of that city being as intelligent as this youth was silly, permitted him to tell his story unmolested while they employed themselves in selling their spice and cinnamon.

C. Very well then; let us not go to war, let us not expose ourselves to the chance of death for the sake of money. Let us be contented with defending ourselves against those robbers called conquerors.

D I A L O G U E XII.

Of the CODE of PERFIDY.

B.

WELL, and shall we speak of the code of perfidy?
A. How! by St. George I never heard of that right. In what catechism have you read concerning this duty of a christian?

B. I find

B. I find it every where. The first thing which Moses performed with his holy people, was it not to borrow by perfidy the moveables of the Egyptians for the purpose of going, said they, to sacrifice in the desert? This perfidy, it must be confessed, is accompanied only by simple theft; those which are joined with murder are much more admirable. The perfidies of Ehud and of Judith are very celebrated. Those of the patriarch Jacob towards his father-in-law and his brother, are only petty tricks, since he assassinated neither the one nor the other. But long live the perfidy of David, who having collected together four hundred rogues, desperate thro' debt and debauchery, having made an alliance with a certain petty king named Akis, proceeded to murder men, women and children in the villages which were under the protection of this petty king, and made him believe that he had only assassinated the men, women and children of Saul. Above all, let his perfidy to the good Uriah be praised! blessed be the wise Solomon, the inspired of God! who caused his brother Adonijah to be sacrificed after he had promised him his life.

We are likewise in possession of the very celebrated perfidies of Clovis the first king of France, which might serve vastly to bring morals to perfection. I am particularly delighted with his conduct towards the assassins of one Rinomere king of Mans, (supposing there ever was a kingdom of Mans). He caused these brave assassins to come behind the king and murder him, and payed them in false money. But as they murmured at not having their agreement, he caused them to be assassinated in order to regain his false money. Almost all our histories are full of similar perfidies committed by our princes, every one of which has built churches and founded monastries.

Now the example of these brave people ought certainly to serve as a lesson to mankind; for where should they seek it unless among the anointed of the Lord?

A. It is of small importance to me that Clovis and such as him were anointed; but I confess to you that
for

for the edification of mankind I could wish that all civil and ecclesiastical history were cast into the fire. I see scarce any thing but the annals of crimes, and whether these monsters have been anointed or not, their history produces nothing but examples of wickedness.

I remember that I formerly read the history of the grand schism of the east. I observed a dozen popes all equally perfidious; all equally deserving to be hanged at Tyburn. And since the papacy has subsisted amidst this long and vast inundation of every species of crime, since the archives of these horrid events have corrected no one, I conclude, that the history is good for nothing.

C. True; I am even of opinion that romance is much to be preferred. We can at least feign and imagine examples of virtue. But Homer has not feigned a single virtuous action in his whole long and monstrous romance of the Iliad. I should prefer the romance of Telemachus if it were not almost entirely composed of digressions and declamations. But, since you have put me upon recollection, here is a part of Telemachus containing a perfidy concerning which I wish to have your opinion.

In one of the digressions of this romance, at Book XX. Adrastus king of the Daunians ravishes the wife of a person named Dioscores. This Dioscores takes refuge among the Grecian princes, and attending only to the dictates of his revenge, offers to slay the ravisher their enemy. Telemachus inspired by Minerva, persuades them not to listen to Dioscores, and to send him back bound hand and foot to Adrastus. What do you think of this decision of the virtuous Telemachus?

A. Abominable. It was apparently not Minerva, but Typhiphone that inspired him. How! to send this poor man back that he may be tortured to death, and that Adrastus may completely resemble David who enjoyed the wife by procuring the death of the husband! The author of Telemachus was mistaken. This is not the action of a generous heart but that of a traitor, and a malevolent wretch. I should have refused the offer of Dioscores, but I should not have delivered him

to

to his enemy. Dioscores I observe was very revengeful, but Telemachus was perfidious and unprincipled.

B. Do you admit of perfidy in treaties?

C. It is very common I confess. I should be very much embarrassed to determine which were the most unprincipled in their negociations the Romans or the Carthaginians, Louis XI. the most christian or Ferdinand the most catholic, &c. &c. &c. &c. But I ask whether it be allowable to deceive for the good of the state?

A. It seems to me that there are knaveries which are so well executed that all the world forgives them: there are others so gross that all the world condemns them. As for us English we have never imposed on any one. The feeble and weak are the only persons which have resource to deception. If you wish for great instances of perfidy, address yourself to the Italians of the fifteenth and sixteenth ages. True politics consist in playing fair and gaining in the long run: false politics know only how to pack the cards, and sooner or later are detected.

B. Very well; but suppose it is not discovered, or that the discovery does not take place till all our money is gone, and the enemy is become too powerful to be compelled to render it back.

C. I think that good fortune is very rare; and that history affords us more instances of illustrious villains punished than happy.

B. I have but one question more to ask. Do you think a nation may cause a public enemy to be poisoned according to this maxim, *Salus reipublicæ suprema lex esto?*

A. You must apply to the casuists for a solution. If any one should make such a proposition in the House of Commons, I would vote (God forgive me) that he should be poisoned himself, notwithstanding the aversion I have for these drugs. I wish to be informed why that which is a most abominable crime in an individual should be innocent in three hundred senators, or even in three hundred

hundred thousand? Can number transform a crime into virtue?

B. I am satisfied with your answer. You are an honest and independent man.

D I A L O G U E XIII.

Of FUNDAMENTAL LAWS.

B.

I Have heard much of fundamental laws, but have they any existence?

A. Yes—be just is the basis of all laws, and never was basis more frequently shaken.

C. I have lately read one of those scarce good-for-nothing books that antiquarians are so fond of, like as naturalists amass petrified flints imagining from thence that they shall discover the secrets of nature. This book was written by an advocate of Paris, named Louis d'Orleans, who pleaded much against Henry IV. before the league, and who happily lost his cause. Behold how this counsellor expressed himself upon the fundamental laws of France.

“ The fundamental law of the Hebrews was, that
 “ no leper could reign over them. Henry the Fourth,
 “ is a heretic, therefore he is leprous, and there-
 “ fore he cannot by the fundamental law of the
 “ church reign in France. The law requires that who-
 “ ever reigns in France should be a christian as well as
 “ a male. Whoever does not hold the catholick apo-
 “ stolick, and Roman faith is no christian and believes
 “ not in God. Such a one can no more reign in France
 “ than the greatest scoundrel in the universe, &c.”

It is exceedingly true that at Rome whoever believes not in the pope, believes not in God, but this is not absolutely true in the rest of the earth, where this maxim is subject to some few restrictions; and it appears to me that Master Louis d'Orleans, advocate to the parliament of Paris, did not reason altogether so clearly as Cicero and Demosthenes.

B. It

B. It would give me great pleasure to see what will become of the fundamental law, of the holy Roman empire, if the electors should even be capricious enough to elect a protestant Cæsar in the superb city of Franckfort upon the Maine.

A. Why it would happen in that case as it did in the case of the fundamental law which limited the number of the electors to seven, because there were seven heavens, and because the great candlestick in a jewish temple had seven branches.

Is it not a fundamental law in France, that the royal domaine is unalienable? Yet is it not almost wholly alienated? I believe you will scarcely deny that all these fundamentals are built on quicksands. Those laws, which they call fundamental, like all others, are no other than laws of convention of ancient usages, of ancient prejudices, and which change with times and circumstances. Ask the modern Romans, if they pay any respect to the fundamental laws of the ancient Roman republick. It was necessary that the royal domains of England, France and Spain, should remain with the crown, when kings like you and me, depended upon the produce of their own lands. But at present when they have their revenues from taxes and excise, what does it matter, whether they have or have not these domaines. When Francis I. broke his word with Charles V. his conqueror, when he found it most convenient to violate the oath he had taken to render up Bourgogne, he made it apparent by his counsellors that Bourgogne was unalienable, but had Charles V. come at the head of a powerful army to prove the contrary, Bourgogne would inevitably have been alienated.

The fundamental law of *la Franche-comté*, was to be free, when governed by the house of Austria, it was afterwards, and continues so to this day, united, most intimately and essentially, to the crown of France. The Swiss have adhered as essentially to the empire, and to this day have preserved as essentially their liberty.

It

It is this liberty which is the fundamental law of all nations. This is the only law which nothing can annul, because it is the law of nature. The Romans may say to the pope, Our first fundamental law was to have a king, who reigned over a league of land; our next was to elect two consuls and afterwards tribunes: since when our fundamental law was to be devoured by an emperor, then to be massacred by a people who came from the north, then to fall into anarchy, and then to die of famine under the government of a priest. We have returned at last to the true fundamental law, which is to be free. Away to other fools with your pardons and indulgencies in *articulo mortis*, depart from a city never designed for you.

B. Amen.

C. I cannot help hoping that this happy hour will yet arrive. It will be a joyful spectacle to our grand children.

A. Would to God that their grand fathers might have this joy! of all revolutions this is the most easy and the least thought of.

B. That is, because as you have already said the principal characteristic of men is to be fools and cowards. The Roman rats have not yet learnt the way to fix the bell to the cat's neck.

C. But shall we not admit some fundamental laws?

A. The law of liberty comprehends them all. When no subaltern tyrant shall oppress the husbandman; when no citizen shall suffer imprisonment but in consequence of a legal process before his peers, who shall decide between him and his prosecutors; when no man shall be robbed of his meadow or his vineyard under the pretext of public liberty, without receiving ample satisfaction; when priests shall teach and practice morality, when they shall edify mankind instead of domineering over them and fattening themselves upon their property, then shall law reign, and caprice be banished.

C. Every man is ready to set his hand to all this.

D I A L O G U E XIV.

That every STATE ought to be independent.

B.

AFTER having spoken of the right of killing and poisoning in the time of war, let us attend a little to how we ought to act in times of peace.

First how ought states, whether monarchies or republics, to be governed?

A. By themselves certainly without any dependance upon foreign powers, or at least on weak and despicable powers.

C. It was exceedingly shameful then for England to be the vassal of a legate. You remember a certain droll fellow named Pandulph, who obliged your king John to kneel before him, and in this posture received his professions of obedience and homage to the bishop of Rome, Innocent III. the lord's vicegerent, the servant of the servants of God, on ascension eve, the 15th of May, 1213?

A. Yes, yes, we remember to treat this insolent servant's servant as he deserves.

B. For the love of truth, Mr. C, do not let us pretend to exult on this account. There is not a kingdom in Europe that the bishop of Rome has not bestowed by virtue of his humble and holy prerogative. The lord's vicegerent Stephanus took away the kingdom of France from Chilperic to give it to his chief domestic Pepin, according to your own historian Eginard, that is, if the writings of this Eginard have not been falsified by the monks, as well as many other writings as I suspect.

The lord's vicegerent Sylvester gave the kingdom of Hungary to duke Stephen, in the year 1001, to please his wife Gizele, who had abundance of dreams.

The lord's vicegerent, Innocent the Fourth, in 1247, gave the kingdom of Norway to a bastard named Hakin, whom the said pope in the plenitude of his power made legitimate for fifteen thousand marks of silver, and which

as those fifteen thousand marks of silver had not at that time any existence in Norway, Hakin was obliged to borrow before he could pay.

During two whole centuries the kings of Arragon, of Castile, and of Portugal, held their kingdoms by the tenure of paying annually a tribute of two golden livres to the lord's vicegerent. We know very well that emperors have been deposed, or obliged to ask pardon, or assassinated or poisoned by virtue of a bull. Not only, I say, has this servant of the servants of God bestowed every kingdom without exception where the catholick communion prevailed, but he has likewise in retaining the power, retained the sweets of that power, and there are none of these states in which he has not levied tythes and tributes of every species.

He remains to this day lord paramount of the kingdom of Naples, from which he has received liege homage for these seven hundred years. The king of Naples, the descendant of so many sovereigns, continues to pay him tribute. The king of Naples is the only remaining royal vassal in Europe. Just heaven! and to whom!

A. If he will take my advice he will not continue so long.

C. I am astonished when I behold the traces of ancient superstition which still exist! By what strange fatality has it happened that almost all princes have voluntarily subjected themselves for the yoke which was presented to them?

B. The reason is very plain. In those times princes and barons neither learnt to read nor write, the court of Rome understood those arts. These gave it that prodigious superiority, so many traces of which it still retains.

C. But was it possible that princes and barons who were free should submit so tamely to such jugglers.

A. I see plainly how it was. The savages knew how to fight, and the jugglers how to govern. But at length, when the barons learnt to read and write, then the leprosy of ignorance diminished among the magis-

trates and principal citizens, and they looked the idol in the face, before whom they had so long licked the dust. The one half of Europe retorts injury for injury to the servant of the servants of God instead of homage; the other half still kisses his feet, but binds his hands, at least this is what I have read in a history which though modern is true and philosophical. I am certain that if the king of Naples and of Sicily chose to renounce the prerogative which he alone possesses of being liege man to the pope, the servant of the servants of God, and of giving him every year a little horse with two thousand golden crowns hung at his neck, all Europe would applaud his conduct.

B. And he would be right, for it is not the pope who bestowed the kingdom of Naples. Though the Norman murderers, to colour their usurpations and render themselves independent of the emperors to whom they had done homage, made their oblations to the holy church, the king of the two Sicilies, who is descended in a right line from Hugh Capet, and not from the Normans, is under no such obligation. It is entirely in his own choice.

The king of France need but speak the word, and the pope will have no more power there than in Russia. We should no longer pay first fruits to Rome, we should no longer purchase permission of the pope to marry, to espouse a cousin or a niece; I will take upon me to say that the tribunals of France, called parliaments would register the edict without remonstrating.

We are not yet acquainted with our own powers. Whoever should have proposed fifty years ago to drive the Jesuits from so many catholick kingdoms would have been thought the most visionary of men. This Colossus stood with one foot in Rome, and the other in Paraguay, his arms embraced a thousand provinces, and his head was exalted to the heavens. I passed by and behold he was no more.

A puff would extinguish all the other monks, and they would disappear from the face of the earth.

A. I

A. I know it is not the interest of the English that France should have less monks and more men. But I have such an aversion to cowls and beads that I would rather see France in review than in procession. In a word, I am a citizen, and I do not love to look on citizens who are no longer so, on subjects who are the subjects of a stranger, and on patriots who are of no country. I wish to behold every state perfectly independent.

You have said that men were blind, that they afterwards blinked, and that at last they begin to see with both eyes, but to whom are they obliged for their sight? Why to five or six oculists who have appeared at different periods.

B. True; but the mischief is, there are many among the blind who are endeavouring to destroy the surgeons who are so anxious to effect their cure.

A. Let us hold however the candle to those only who are beseeching mankind to be couched for these mental cataracts.

D I A L O G U E XV.

Of the best GOVERNMENT.

C.

WHICH among all the states appears to you to have the best laws, the jurisprudence most conformable to the general good, and the happiness of individuals.

A. England beyond all contradiction. The proof of which is that, amidst all our disputes, we continually vaunt of our happy constitution, and that, in almost every other kingdom, they continually wish for another. Our criminal laws are equitable and not barbarous, we have abolished the torture against which nature raises her voice in vain in so many kingdoms. This horrid method of destroying the innocent who were feeble, and saving

the guilty who were robust, finished with our infamous chancellor Jefferies who joyfully employed this infernal custom under James II.

The accused is judged by his peers, he is never supposed guilty till they are all of one opinion respecting the fact, it is the law alone that condemns the culprit when the crime is proved, and not the arbitrary sentence of a judge, the utmost punishment is simply death, unattended by studied torments. To stretch a man upon the cross of St. Andrew, to break his arms and his thighs, to put him in this mangled condition upon a coach wheel, appears to us a species of barbarity too offensive to human nature. If for the crime of high treason we take out the heart of the criminal after his death, it is but the remains of an ancient savage custom, a terrible ceremony which affrights the spectator without injuring the malefactor. We do not add torments to death; neither do we refuse council to the accused. We do not put a witness whose testimony does not amount to proof, to the necessity of lying, lest he should be punished if he retracts. We receive no depositions in private because that would encourage informers, the proceedings are all in public. Secret processes are the inventions of tyranny.

We have not the savage weakness of inflicting the same torments on indecours as on parricides. This cruelty, as foolish as it is abominable, is unworthy of us.

In civil cases it is the law alone that determines, nor is it permitted to be interpreted, as this would be abandoning the fortunes of our citizens to caprice and partiality.

If the law has not the power to determine a cause, it is then carried into the court of equity, and argued before the chancellor and his assistants, and if the case is of great importance a new law is made, for the time to come, in parliament, that is, in the great national assemblies.

The advocates never solicit the judges, that would be plainly saying, they wished to seduce them. A judge would be dishonoured were he to admit visits from counsellors

counsellors; they seek not such ridiculous honour though it might flatter the vanity of a shopkeeper. We do not purchase the right of judging, neither do we sell the place of magistracy as we would sell a farm. If members of parliament sometimes sell their votes to the court, they only resemble those beauties who sell their favours and keep it secret. The law ordains us to sell nothing but earth, and the fruits of the earth, while, in France, the law itself fixes the price of the employment of counsellor to the king's bench, which they call a parliament, and of the president himself, whom they call a *mortier*. Almost all offices and dignities are sold in France, as they sell herbs at a market. The chancellor of France is often chosen from the body of the counsellors of state, but before any one can be a counsellor of state, he must first have purchased the place of master of requests. A regiment is not the price of services, it is the price of a sum which the parents of a young man pay that he may go and keep open house, at the expence of others, for three months in the year in some provincial town.

You clearly perceive how happy we are in having laws that shelter us from such abuses, nothing is arbitrary among us except the favours of the king. He pardons, the law does every thing else.

If authority illegally infringes the liberty of the least citizen, the law will revenge him. The minister of such illegal authority is immediately condemned to pay a fine to the citizen, and he pays it.

Add to all these advantages the right that every man enjoys of speaking by his writings to the whole nation. The admirable art of printing is as free, in our island, as is our speech. Can we help being in love with such a government?

We have always, it is true, two parties, but they rather serve to keep the nation continually on its guard than to injure it by division. These parties watch each other, and each disputes the honour of being the guardian of public liberty. We have quarrels, but always bless that happy constitution which gave them birth.

G. Your

C. Your government is a beautiful, but brittle piece of mechanism.

A. We sometimes give it severe strokes, but never break it.

B. Preserve this precious monument which has wisdom and courage for its foundation; it has cost you too much to be abandoned to destruction. Man is born free; the best government is that which preserves the most possible, to each mortal, of this best gift of nature.

But mark what I say to you—Agree with your colonies, that the mother and her daughters may not be at strife.

D I A L O G U E XVI.

Of ERRORS and ABUSES.

C.

IT is said that the world is governed by errors and abuses; is that true?

B. I believe that in nations where governments are established, that there is at least a third part of errors and abuses, a third part of tolerable customs, and another third of calamities and misfortunes; like as upon the sea you find it equally divided between calms and tempests. This is what gave birth to Jupiter's two tons and to the sect of the Manicheans.

A. By heaven if Jupiter had two tons his ton of evil was the great ton at Heidleberg, and his ton of good, was scarcely so big as a butter firkin. There are so many abuses and frauds in the world, that when I went to Paris in 1751, they were proclaimed six times a week all the year at the court of king's bench, which they call a parliament.

B. Yes; but to whom shall we appeal concerning those abuses which reign in the constitution of the world.

Is

Is it not an enormous abuse that all animals tear and devour each other with cruelty for food ; nay more, that men slaughter each other still more furiously without designing even to eat the slain?

C. Oh, sir, pardon me; we formerly fought that we might eat one another, but in process of time good institutions degenerate.

B. I have read in some book that we do not live, upon an average, above two and twenty years. That if you take from these two and twenty years the time lost in sleeping, and even while waking, the net produce will not be above fifteen years; that from these fifteen years if you take away infancy, which is no more than a blank passage into existence, and that if you retrench from this remainder the time occupied by the torments of the body, and the chagrine of that part which we call the soul, the residue will not be above three clear years for the most happy, and not six months for the rest. Is not this an intolerable abuse?

A. And what the devil conclusion do you draw from all this? Would you prescribe other laws to nature than those by which she is governed?

B. At least I would wish for others.

A. That is a certain secret to abridge your life still more.

C. Well, well; here let us leave the footsteps of that clerk who made this said nature, by which children are formed in the matrix, there frequently to perish and to make their mothers perish with them, this nature, which is the source of a disease that has embittered life, by gliding from America to Europe through the small channel of a pin, and of the small pox, which has decimated the human species, of the plague an everlasting resident in Africa, and of the poisons with which the earth is covered, and which vegetate without culture, while wheat is only to be procured by incredible labour. We will speak of those abuses only which we ourselves have introduced.

B. The list will be very long, even in the best societies; for, not to mention the regular art of assassinating men by war, of which we have already spoken, we have the
art

art of depriving them of bread and cloathing who cultivate the earth and card the wool: the art of accumulating the riches of a whole nation in the coffers of five or six hundred people, the art of publicly and ceremoniously killing with half a sheet of paper those who have displeased us, such as a Marshal d'Ancre, a Marshal de Marillac, a Duke of Somerset or a Mary Stuart. We have the custom too of preparing men for death by torturing them, that we may know their associates when they could not have had any. We have burning faggots and keen poniards. We have scaffolds decorated to punish metaphysical disputes in Baralipton. Not to mention that the one half of a kingdom is continually disturbing the other about their loyalty. But I must conclude. I could be more prolix than Esdras, were I to have all the abuses written down concerning which I could dictate.

A. All this is true, but you will not deny that the most part of these horrible abuses are abolished in England, and begin to be greatly mitigated among other nations.

B. I allow it; but whence does it happen that men are become something better, and less unhappy than they were in the times of Alexander the Sixth, St. Bartholomew and Oliver Cromwell?

C. Because they begin to think, to observe and to write well.

A. You are right—superstition raises the storm, it is appeased by philosophy,

D I A L O G U E. XVII.

On curious SUBJECTS.

B.

A Propos, Mr. A; pray do you believe that the world is very ancient?

A. My whim is, Mr. B. that it is eternal.

B. That opinion may be supported by way of hypothesis.

All

All the ancient philosophers believed matter to be eternal. And from mere matter to organized matter is but one step.

C. Hypothetical arguments are very amusing but entirely inconclusive. They are dreams which vanish before the Bible, for we are always obliged to refer to the Bible.

A. Oh, without doubt: We all to be sure think that this is the year of our Lord 1760, that from the creation of the world, which was made of nothing, to the universal deluge, for which waters were expressly created, 1656 years passed away, according to the vulgate, 2309 according to the Samaritan text, and 2262 according to that miraculous translation which we call the septuagint text. But I have always been astonished that Adam and Eve, our father and mother, together with Abel, Cain and Seth, were never known to any one person in the world except a small Jewish horde, who kept the thing entirely secret till the Jews of Alexandria recollected themselves, and, under the first and second Ptolemies, translated their rhapsodies into bad Greek, which, till then, had been utterly unknown to the rest of the world.

It is whimsical enough that the title of our family should remain deposited in one sole branch of our house, and that too the most despicable, while the Chinese, the Indians, the Persians, the Egyptians, the Greeks and the Romans never so much as heard of either Adam or Eve.

B. But what is still worse, Sanconiathon, who incontestably lived before the time in which they place Moses, and who, as well as many other authors, made a Genesis according to his fashion, mentions neither this Mr. Adam nor that Mrs. Eve, he gives us very different parents.

C. Whence do you conclude Mr. B. that Sanconiathon lived before the time of Moses?

B. Because, had he been cotemporary with, or after, Moses, he would have mentioned him. Sanconiathon wrote in Tyre, which flourished a very long time before this Jewish horde had taken possession of a corner of land on the borders of Phœnicia. The Phœnician language
was

was the mother tongue of the country. The Phœnicians had long cultivated letters; the Jewish books confess it in many places. It is expressly asserted*, that Caleb possessed himself of the city of letters, named Cariath-Sepher, that is to say, the city of books, afterwards called Dabir. Sanconiathon would undoubtedly have noticed Moses, had he lived before or during his age. It is not to be supposed that he would have omitted in his history, the admirable adventures of Moses, or Moyſes, such as the ten plagues of Egypt, and the waters of the Red Sea, that were suspended on the right and on the left, to permit three millions of fugitive thieves to pass dry shod, which waters immediately ingulphed some millions of other men who pursued these thieves. These are not little obscure occurrences that a grave historian would pass in silence. Sanconiathon says not a word of these garagantuan prodigies, therefore he knew them not; therefore he was anterior to Moses as well as Job, who likewise never mentions them. Eusebius, his abbreviator, who collected so many fables, would not have failed to avail himself of so brilliant a testimony.

A. That reason cannot be answered. No one ancient nation has spoken of the Jews, nor like the Jews, nor has any one had a cosmogony in the least respect similar to theirs. These unfortunate Jews are so modern, that they even have not a word in their language which signifies God; they were obliged to borrow the word Adonai of the Sidonians, and the word Jehovah or Hiao of the Syrians. Their obstinacy, their superstitious innovations, and their consecrated usury are the only things which belong to them alone, and we have every reason to suppose that these wretches among whom the names of astronomy and geometry were absolutely unknown, had never learnt either to read or write till they were slaves in Babylon. It has before been proved that they were taught the names of the angels, as like-

* Judges, chap. i. ver. 11:

wife the name of Israel, as the renegade Josephus himself avows.

C. And have all the ancient nations had a Genesis anterior to that of the Jews, and entirely different?

A. Incontestably. Look at the Shaster and the Vedam of the Indians, the five kings of the Chinese, the Zend of the first Persians, and the Thaut or Mercurius Trismegistus of the Egyptians. Adam is as much unknown in these books, as are the ancestors of that multitude of marquises and barons with which Europe swarms.

C. Let us have done with Adam: it is a sorrowful subject, all our almanacks reckon from Adam.

A. They may reckon how they please, almanacks are not my archives.

B. So then Mr. A. you are a pre-Adamite?

A. I am a pre-Saturnian, a pre-Ofirite, a pre-Bramite, a pre-Pandorite.

C. And on what foundation do you mean to build your fine hypothesis of an eternal world?

A. If I explain that to you, you must listen patiently to some few preliminaries.

I do not know whether we have hitherto reasoned well or ill, but I know we have reasoned, and that we are all three intelligent beings: intelligent beings cannot have been formed by an unintelligible, blind, and insensible Being. There is certainly some difference between the ideas of Newton and the dung of a mule. Newton's intelligence, then, is derived from another intelligence?

When we behold a beautiful machine, we say it is the produce of an excellent workman, and that he had an excellent understanding. The world is most assuredly an admirable machine; therefore, an admirable intelligence must exist somewhere or other. This argument is old, but it is not the less estimable on that account.

All living bodies are composed of levers and pulleys, which act according to the laws of mechanics and of liquids, which the laws of hydrostatics cause perpetually to circulate; and when we reflect that these beings possess thought, which has no connection or agreement

with their organization, we are surprised in the highest degree.

The motion of the stars, the revolution of our little earth about the sun : every thing is performed in consequence of the most profound mathematical laws. How could Plato who was not acquainted with one of these laws, the chimerical Plato, who said the earth was founded on an equilateral triangle, and the water on a rectangled triangle ; the ridiculous Plato who said that no more than five worlds could exist, because the number of regular bodies is limited to five ; the ignorant Plato, who did not even understand spherical trigonometry, how could he, I say, possess a genius of such penetration, or so happy an instinct, as to call God the eternal geometer ; or even to perceive the existence of a creating intelligence ?

B. I have formerly amused myself with reading Plato. It is evident that Christianity is indebted to him for its metaphysical part. All the Greek fathers were incontrovertibly Platonists. But what relation has all this with the eternity of the world you were speaking of ?

A. Let us proceed in order if you please. There is an intelligence which animates the world. Spinoza himself allows it. It is impossible to contend against this truth which surrounds and presses us on all sides.

C. Yet I have known rebels who deny the existence of a creating intelligence, and affirm that motion alone has of itself produced all we see and all we are. They tell you with confidence that this universe was a possible combination, as its existence demonstrates ; it was therefore possible that motion alone should make the arrangement. Take four stars only, Mars, Venus, Mercury, and the Earth, let us consider only their relative situations, and abstract every other circumstance, and let us observe how the probabilities stand, that motion alone should have placed them as they are. We have but four and twenty chances in this combination ; that is to say, the wager is only four and twenty to one, that these stars should be found with respect to each other, in their present situation. Let us add Jupiter to these four globes, and the wager will

will only be one hundred and twenty to one, that Jupiter, Mars, Venus, Mercury, and our globe should be placed as we see them.

Lastly, add Saturn, and the chances will be no more than seven hundred and twenty to one, to place these six principal planets in the arrangement they have at present with respect to distance. It is therefore demonstrated, that in seven hundred and twenty throws, motion alone might be capable of placing these six planets in their order.

Join to these the secondary planets, with all their combinations and motions, and every thing which vegetates, lives, thinks, or acts in all these globes, and nothing more is necessary than to encrease the number of chances; multiply this number to all eternity, to that number which our weakness calls infinite, and there will always remain unity in favour of the world, in its present state, as produced by mere motion. It is, consequently, possible that in the eternity of time, motion alone might produce the universe such as it is. These are their arguments.

A. I beg pardon, my dear friend *C.* this supposition appears to me extremely ridiculous on two accounts: the first is, that in this universe there are intelligent beings, and you cannot prove that motion alone produces the understanding. The second is, that by your own acknowledgment, the odds are infinity to one, and the probability must indeed be weak, which has infinity against it.

Yet more; Spinoza himself admits this intelligence. Why should you wish to go farther than him, and by a foolish pride, plunge your reason into an abyss into which Spinoza durst not descend? Do you perceive the extreme folly of maintaining that a blind cause could occasion the square of the revolution of one planet, to be always in proportion to the squares of the revolutions of the other planets, as the cube of its distance is to the cubes of the distances of the others from the common center? My friends, the stars must either be great geometers, or the eternal geometer has arranged the stars.

C. No

C. No invectives or passion, if you please. Spinoza made use of none; it is easier to use invectives than argument. I assent to the doctrine of a creating intelligence in the world and am very ready to say with Virgil.

Mens agitant molem, & magno se corpore miscet.

I am not one of those who affirm that the stars, men, animals, vegetables and thought are the effect of a cast of the dice.

A. I beg pardon for being angry; I had the spleen; but I had not the less reason for being so.

B. Let us proceed without vexing ourselves. Admitting the existence of a God, how could you maintain by way of hypothesis that the world is eternal.

A. In the same manner as I would maintain by way of thesis, that the rays of the sun are as ancient as that luminary itself.

C. A very pleasant fancy indeed! what! are smoke batchelors in theology, fleas, apes, and we, are we all emanations from the divinity?

A. There is certainly something divine in a flea: it can leap fifty times its own height and has not given this advantage to itself.

B. What! have fleas existed from all eternity?

A. It is necessary they should; since they exist to-day and were in being yesterday, and there is no reason why they should not always have existed. For if they be useless they ought never to have been. Do you suppose that the eternal geometer remained inactive for a whole eternity? to what purpose were it to be a geometer and an architect, to pass an eternity without building or combining. He has produced, therefore his essence is to produce: he exists necessarily, therefore, every thing which is in him is essentially necessary. A being cannot be deprived of its essence; for it would then cease to be. God is active, and therefore has always acted; consequently the world is an eternal emanation from himself. Whoever, therefore, admits a God, must grant the
eternity

eternity of the world. The rays of light have necessarily emanated from the luminary for all eternity; and every combination is a part or proceeding from the combining being from all eternity. The man, the serpent, the spider, the oyster, have always existed because their existence has always been possible.

B. What! do you believe that Demiourgos, the creating power, the mighty being, has created every thing which was to be created?

A. I imagine so: for otherwise there could not have been the necessary creating power. You would make him either an impotent or indolent workman, who had accomplished no more than a very small part of his work.

C. What! is the existence of other worlds impossible?

A. It may very well be so; for if it is not, you must admit of an eternal and necessary cause, acting by its essence, which tho' capable of making things, has nevertheless forborne to do it. Now such a cause which produces no effect, seems to me as absurd as an effect without a cause.

C. Yet many people affirm, that this eternal cause has chosen this world out of all the possible worlds.

A. They do not appear possible to me, since they do not exist. These gentlemen might as well say, that God has chosen out of the impossible worlds. Certainly the eternal artist, ought to have arranged these possible worlds in space. Why, for example, should the universal, eternal and necessary intelligence, who presides over this world, why should he have rejected in his idea an earth without poisonous herbs, without diseases, plagues or holy offices of inquisition? it is very possible that such an earth exists; it must appear superior to ours in the eye of Demiourgos: yet nevertheless we have the inferior one. To say that this happy earth is possible, and that he has not bestowed it on us, is to say that he possesses neither reason, goodness nor power. Now, we cannot affirm this; and

consequently if he has not given us this perfect earth, it is apparently because it was impossible to make it.

B. And who has informed you that this earth does not exist; it is probably one of those globes which perform their revolutions about Sirius, or the lesser dog, or the bull's eye.

A. In that case we agree; the supreme intelligence has created all which it was possible for him to do; and I persist in my idea, that every thing which does not exist must in its own nature be impossible.

C. Space then must be filled with globes whose perfections rise one above the other; and we necessarily possess one of the worst lots. This is a brilliant thought, but by no means consoling.

B. On the whole then, you think that the eternal creating power, the universal intelligence; in a word, the great Being, has necessarily from all eternity produced every thing which exists.

A. So it appears to me.

B. But in that case this great Being was not free.

A. I have told you in our other dialogues an hundred times that to be free is power. I can conceive no other liberty. You know that the liberty of indifference is a term void of meaning.

B. Are you, in conscience, well convinced of your system?

A. Convinced! I am convinced of nothing. I believe that there is an intelligent being, a creating power, a God; and as to all the rest, I explore my way in darkness. I affirm to-day; to-morrow I doubt; and the day after I deny: and thus I may every day deceive myself. All the candid philosophers I have been acquainted with, have confessed, when we have conversed freely over a bottle, that the great Being had given them no greater evidence than mine.

Do you think that Epicurus always saw clearly the declination of his atoms; that Descartes was convinced of the existence of his striated matter? Believe me, Leibnitz laughed at his monades and pre-established harmony. Tellamed laughed at his mountains formed
by

by the sea. The inventor of the organized molecules is wise and polite enough to laugh with the rest. Two augurs, you know, laugh at the fools when they meet. The Irish Jesuit, Needham, is the only one who does not laugh at his eels.

B. It is true that with respect to systems, we ought to reserve the right of laughing to-day at the ideas of yesterday.

C. It gives me pleasure to have found an old English philosopher, who can laugh after having been vexed, and who believes in God. The circumstance is very edifying.

A. True; I believe in God, and in so doing I believe much more than the Universities of Oxford and Cambridge, and all the priests of my country. For all these people are so confined in their notions as to believe that God has been worshipped no more than six thousand years, while, for my part, I hold that he has been worshipped from all eternity. I cannot admit of a master without domestics, a king without subjects, a father without children, nor a cause without effects.

C. We are agreed. But answer me this with sincerity and confidence. Do you believe in a God who rewards and punishes, who distributes joys or pains to the creatures which have proceeded from him, and which are necessarily in his hands as the clay is in the hands of the potter?

Do you not think Jupiter very ridiculous for having kicked Vulcan out of heaven because he was lame of both legs? I know of nothing more unjust. Now the eternal and supreme intelligence ought to be just; the eternal love ought to cherish its infants, and not kick them or drive them out of doors, because he himself has necessarily caused them to be born with lame legs.

A. I am acquainted with every thing that has been said on this abstruse subject, yet I am little the better for it. I wish my tailor, my servants, and my wife to believe in God; and imagine that in that case I should be less injured by them.

C. You are satirizing and deriding the world. I have known twenty devotees who have given their husbands strange heirs.

A. And I have known one whom the fear of God has restrained, and that is sufficient for my purpose. What then, according to your opinion, your twenty shameless women, would have been more faithful if they had been atheists. In a word, all polished nations have admitted of gods who dispensed rewards and punishments; and I am a citizen of the world.

B. You say well; but would it not be better if the creating intelligence had nothing to punish? And besides, how and when will he punish?

A. I know nothing of myself; but once again I repeat that we ought not to shake an opinion so useful to mankind. I abandon all the rest to you. I will even abandon my opinion of the eternity of the world if you absolutely insist on it, tho' I am strongly attached to this system. After all, what does it signify to us whether this world be from eternity or from yesterday? Let us live mildly, let us adore God and be just and benevolent: these are the essentials which ought to terminate every dispute. Let the intolerant barbarians be accursed by the whole human race, and let every one think as he pleases.

C. Amen. Let us go take a chearful glass and bless the great Being of beings.

D I A L O G U E XVIII.

Conversation between the SUPERINTENDANT of the ROYAL ENTERTAINMENTS and the ABBE' BRIZEL.

IT is some time since a lawyer of the *order* of advocates, having been consulted by a person of the *order* of comedians, to be informed how far those who possess a good voice, noble gestures, sentiment, taste, and all the

the talents necessary for speaking in publick, ought to be stigmatized and disgraced, the advocate examined the affair according to the *order** of the laws. The *order* of convulsionaries having informed against this work to the *order* of the grand chambre sitting at Paris, they decreed an *order* to their executioner to burn the consultation, as if it had been the mandate of a bishop, or a book written by a Jesuit. I flatter myself, that they will do the same honour to this little conversation between the acting Superintendant of the royal entertainments and the Abbé Brizel. I was present at this conversation: I have faithfully related it, and here follows a small abstract, that every reader of the *order* of common sense may explain and enlarge it according to his pleasure.

I will suppose, said the Superintendant to the Abbé Brizel, that we had never heard of theatrical entertainments before the time of Louis XIV. I will suppose this prince to have been the first who ever gave publick amusements; that he caused *Cinna*, *Athalie*, and the *Misanthrope* to be composed, and procured them to be represented by lords and ladies, before all the ambassadors of Europe. I beg to be informed whether it would have entered into the mind of the curates *la Chetardie*, or *Fantin*, who are both distinguished by the same kind of adventures, or any other curate, or monk, or religious to excommunicate the lords and ladies, and even Louis XIV. himself; to refuse them the sacraments of marriage and burial?

Doubtless, no, replied the Abbé Brizel, such impertinent absurdity could never have entered the mind of any one.

I will go farther, said the Superintendant of the royal amusements. When Louis XIV. and all his court danced on the stage; when Louis XV. and a great number of lords of his own age danced in the *Salle des*

* The work which this advocate undertook in favor of the theatre, and in which much was said about *order*, was presented by master le Dain, and burnt by the hand of the hangman.

Thuilleries; do you think they were excommunicated? You jest with me, replied the Abbé Brizel; we are sufficiently silly and ridiculous, I must confess, but not quite enough so, to think so absurdly.

But, continued the Superintendant, you must at least have excommunicated the pious Abbé d'Aubignac, father Bossu, superior of St. Geneva, father Rapin, the Abbé Gravina, father Brumoy, father Parée, madam Dacier, all whom after Aristotle have taught the art of tragedy and the epopea? We have not yet fallen into this excess of barbarism, answered the Abbé Brizel; it is true that the Abbé La Cotte, Mr. de la Solle, and the author of the *Nouvelles Ecclesiastiques*, pretend that music, public speaking, and dancing are mortal sins; that it was not allowable for David to dance, except before the ark; and what is yet more, David, Louis XIV. and Louis XV. did not dance for money; that the empress of the Romans never sung but in presence of some persons of her court; and that we do not indulge ourselves in the pleasure of excommunicating any but those who get something by speaking, singing, or dancing in public.

Is it therefore clear, said the Superintendant, that if there had been a tax levied under the name of *menus plaisirs du roi*, and that this tax had served to pay the charges of the king's theatre, the king would have incurred the pain of excommunication, according to the will and pleasure of every priest who chose to hurl this dreadful thunder at the head of his most Christian Majesty.

You embarrass us very much, replied the Abbé Brizel.

I wish to urge the matter with you, returned the other; not only Louis XIV. but the cardinal Mazarin, cardinal Richelieu, archbishop Triffino, and pope Leo, expended great sums in causing tragedies, comedies and operas to be performed; the people likewise contributed to these expences. Yet I do not find in history, that any vicar of St. Sulpice excommunicated pope Leo and these cardinals on that account.

Why then was Mademoiselle le Couvreur carried in a coach to the corner of the Rue de Bourgogne? Why

was

was the Sieur Romagnesi, actor in the Italian company, why was he buried in the high road like an ancient Roman? Why was an actress in the discordant chorusses of the royal academy obliged to remain three days in her cellar? Why are all these persons burned in a little fire, without having a body till the day of judgment, and after that eternally burnt, when they have recovered their bodies? For no other reason, say you, but because we pay twenty sols for admittance into the pit.

Yet these twenty sols do not change the nature of things. Things are neither better nor worse, whether they be paid for, or whether they be given gratis. A *de-profundis* takes a soul out of purgatory equally well, whether it be chanted to music for ten crowns, or sung in full chorus for twelve francs, or psalmodied for charity. Therefore Cinna and Athalia are not more diabolical, when they are represented for twenty sous, than when the king thinks proper to oblige his court. Neither Louis XIV. when he danced for his pleasure, nor the empress, when she played in an opera, were excommunicated; it cannot therefore be just to excommunicate those who give the same pleasure for money, with the permission of the king of France or the empress.

The Abbé Brizel felt all the force of this argument, and answered thus: there are temperaments; every thing wisely depends on the arbitrary will of a curate or a vicar. We are so wise and so discerning in France, that we have no other certain rule. They durst not bury the illustrious and inimitable Moliere in the parish church of St. Eustatia; but he had the good fortune to be conveyed into the chapel of St. Joseph, according to our commendable and wholesome custom of making charnel houses of our temples. It is true that St. Eustatia is so great a saint, that there could be no method of carrying to him by four habited bearers, the corps of the infamous author of the *Misanthrope*. But however, St. Joseph affords some consolation; for holy ground is holy ground. There is a prodigious difference between consecrated and unconsecrated ground; and besides, the better the man, the better is his ground. That in
which

which Moliere is laid, has acquired some reputation on that account. Now this man being buried in a chapel, cannot be damned like Mademoiselle le Couvreur and Romagnesi, who are buried in the highway. Perhaps he is in purgatory for having written Tartuffe; but I will not venture to swear it. But I am convinced of the salvation of John Baptist Lulli, first violin to Mademoiselle, musician and superintendant of the music to the king, who played in Carissilli and Pourceaugenac, and who besides was a Florentine: he is mounted to heaven as I shall mount myself. This is evident and indisputable; for he has a fine marble tomb in the church of St. Eustatia. He has not come near the laystall: good and bad luck are all in this world—Thus it was the Abbé Brizel argued like a powerful logician.

The Superintendant of the royal entertainments who was acquainted with history, replied thus to him: you have heard of the reverend father Girard; he was a forcerer, this is an allowed fact. It is affirmed that he enchanted his penitent by whipping her gently: besides which he breathed upon her, according to the universal and established custom of forcerers. Sixteen judges declared Girard a forcerer; yet he was buried in holy ground. Tell me why a man who is at once a Jesuit and a forcerer is yet allowed, notwithstanding these two titles, the honors of sepulture, while Mademoiselle de Clairon would not obtain them if she had the misfortune to die immediately after having played Paulina, which Paulina goes off the stage for no other purpose than to be baptized?

I have already told you, replied the Abbé Brizel, that the thing is arbitrary. I would bury Mademoiselle de Clairon with all my heart, if there were a large fee to be gained; but it is possible to find a *curé* who might make a difficulty of the thing; in that case nobody would think of making a dispute in her favor and be cited before the parliament. His majesty's actors are in general of poor families: their relations have neither interest nor money enough to gain a law-suit, and the public cares

very little about it. They enjoyed the talents of *Mademoiselle le Couvreur* during her life, and after her death they suffer her to be treated like a dog, and only laugh at the circumstance.

The example of forcerers is much more serious. It is certain that there formerly were forcerers; and it is as certain that there are none now, in spite of the sixteen provincials who believed *Girard* to be so skilful. Nevertheless the form of excommunication remains unaltered. So much the worse for you, if you have no forcerers; we shall not think of changing our rituals because the world is changed; we are like the physician de *Pourceaugnac*; we want a patient and we will catch him where we can.

We likewise excommunicate locusts; they exist, and I must confess it is deplorable that they continue to affront them; for they do not seem to regard it. I have seen clouds of them in *Picardy*; it is very dangerous to affront great companies, and to expose the thunders of the church to the derision of powerful persons; but as to three or four hundred poor comedians which are spread over France, there is nothing to be feared from treating them like the locusts.

I shall proceed to tell you something a little more convincing, Mr. Superintendent. Are not you the son of a farmer-general? No, Sir, replied the Superintendent; my uncle had that place; my father was receiver-general of the finances, and both were secretaries to the king, as well as my grandfather. Very well then, replied *Brizel*, your uncle, your father, and your grand-father are excommunicated, anathematized and damned to all eternity, and whoever doubts it is a monster of impiety, or in a word, a philosopher.

The Superintendent at this discourse was at a loss to determine whether he should laugh at the Abbé or kick him. He chose the former. I should be glad, sir, said he to *Brizel*, if you would shew me the bull or the council which condemns the receivers of the finances of the king or the adjudicators of the five great farms.

I will shew you twenty councils, replied *Brizel*:
nay,

may, I will shew you more: you shall read in the gospel that all receivers of the revenues are put in the same class with pagans, and you may learn from the ancient constitutions that it was not permitted for them to enter the church in the first ages. *Sicut ethnicus & publicanus* is a passage very well known: the law of the church has been invariable upon that article. The anathema pronounced against the farmers-general and the receivers of the customs has never been revoked, and would you desire them to revoke that which was pronounced against the actors, who during the first ages, played the *Œdipus* of *Corneille*. Begin by extricating your father, your grandfather and your uncle from hell, and we may compound with his majesty's company.

You talk extravagantly, Mr. Brizel, said the Intendant; my father was the lord of the manor, he is interred in his own chapel, my uncle erected a marble mausoleum to his memory, as fine as that of *Lully*, and if the curate had ever told him any thing about his *ethnicus* and *publicanus*, he would have thrown him into the darkest hole in his dungeon. I can very well believe that *St. Matthew* having been a receiver of customs himself, should pronounce damnation upon the employment, and that people so employed during the primitive times were not permitted to approach farther than the church porch; but you will allow that nobody dares openly say this at present: if we are excommunicated it is done under the rose.

You are exceedingly right, said Brizel. Our priests leave *ethnicus* and *publicanus* to the gospel. They open not the ancient rituals, but live peaceably with the farmers-general, provided they put money enough in the plate when they administer the blessed bread.

This answer something pacified the Intendant, but he could not very well digest *ethnicus* and *publicanus*. Tell me, I beseech you, my dear Brizel, said he, wherefore have they inserted that satire in the primitive books, and why did they treat us so cavalierly.

The reason is very plain, replied Brizel. Those who pronounced this anathema were needy people; three-fourths

fourths of them were Jews, the rest were a mixture of poor Greeks. The Romans were their masters, and the receivers of the tributes were either Romans or chosen by the Romans. This was as certain a secret to attract the ill will of the populace, as to anathematize the commissioners of the customs. Conquerors, masters, and their deputies, are always detested. The populace croud to hear those who preach equality to the poor, and damnation to tax-gatherers. Do but cry out in the name of God against power, and imposts, and you will infallibly have the mob on your side, if you are suffered to proceed; and when your mob is sufficiently numerous you will find artful men enough who will put the saddle on their backs, and the bridle in their mouths, and mount them to overthrow states and depose kings. They then begin to build a new edifice, but they preserve the materials of the first though rude and unformed because they are dear to the people. They face the building anew with marble, gold and precious stones, and are lavish of ornaments; but there are always antiquarians who prefer ancient flints to modern marble.

This, Sir, is a concise history of what has happened to ourselves. France has been long in a state of barbarity, it begins at present to be civilized; but there are still many who are attached to their ancient barbarism. We have, for example, some few well meaning people who would, agreeable to the gospel, take from the farmers-general their immense riches, and who would likewise deprive the public of an art as noble as it is innocent, which no gospel has proscribed, and concerning which no apostle has spoken. But the rational part of the clergy, leave the financiers to damn themselves in peace, and only permit the comedians to be excommunicated for the forms sake.

I perceive, said the Intendant, that you do not molest the financiers because they invite you to dinner, and that you harass the comedians because they have nothing to give; but do you forget, Sir, that the comedians are hired by the king, and that you ought not to interrupt his

his majesty's comedian performing the part of Cinna or Polyeuctus by his majesty's command?

And whence do you conclude, said Brizel, that we have no power to damn an officer of the king's? From your liberties of the Gallican church, I suppose. But do not you know, that we excommunicate kings themselves? We have proscribed Henry the Great, Henry the Third, Louis the Twelfth, the father of the people, while he covenanted a council at Pisa, with Philip le Bel, Philip the August, Louis the Eighth, Philip the First, and the holy king Robert; notwithstanding his zeal in burning the heretics. Remember we are the masters of kings, can anathematize them, or destroy them by sudden death, and will you after that lament that our wrath should sometimes fall on the princes of the theatre.

The Intendant was rather vexed, and answered shortly, excommunicate my masters, Sir, if you please, they have the power to punish you; but recollect I am the person who delivers her majesty's orders to the actors to come and perform before her. If they are out of the bosom of the church, so am I; if they commit mortal sins by performing virtuous pieces, and making virtuous men weep, I am the person who occasions them to sin; if they all go to the devil, I am the person who conducts them to his presence. I receive my orders from the lords in waiting, they are more culpable than I am, the king and queen, who issue these orders for amusement and instruction, are a hundred times more culpable still. If you take away the soldiers from the church, you must certainly take away the officers and generals also. You cannot extricate yourself from this difficulty. Please to observe to what excess you carry this absurdity; you suffer citizens in her majesty's service to be thrown to the dogs, while at Rome, and in every other country they treat them respectfully both before and after death.

To this Brizel replied; don't you see that we are a serious, grave people, and consequently superior in all things to other nations. The half of Paris are convulsionaries,

fionaries, and it is necessary that such people should tyrannize over these libertines, who are so contented to obey the king, who do not think of controlling his actions, who love his person, who contribute with alacrity towards the support of his glory and his throne, who do their duty and pass their lives in tranquillity and in cultivating the arts, who respect Sophocles and Euripides, and damn themselves to live like honest men.

I cannot help confessing that this world is a compound of knaves, fools, and fanatics, among whom there is a small select society, called in France, *la bonne Compagnie*. This small society being rich, well educated, instructed and refined, is the flower of the human species. It is for the entertainment of these, that elegant pleasures are invented, it is to give delight to these that the greatest men have laboured, it is these who confer reputation; and, in a word, it is these who despise us whenever they come into our company, though they behave to us with politeness. We all labour to gain admission among this small number of chosen men, and from the Jesuits to the Capuchins, from father Quesnel to the rascal who writes the *Gazette Ecclesiastique*; we take a thousand forms to gain credit with this small number, of which however we can never be.

If we find some lady who listens to us we persuade her that it is necessary in order to go to heaven to have pale cheeks, and that the colour of red is a mortal sin among the saints in Paradise. Thus the lady forsakes her rouge, and we take care of her money.

We love to preach because we let our pews, but how can it be supposed that men of understanding can listen to a dull discourse divided into three heads, who have their minds full of delightful passages from Cinna, from Polyuctus, from the Horatii, from Pompey, from Phædra and from Athalia. It is this which makes us despair.

We visit a lady of quality, and we ask what she thinks of the last sermon of the preacher of St. Roche; her son replies by a quotation from Racine. Have you read, say we, *L'Oeuvre de six Jours*. We have read a new tragedy
say

say they. In truth, the time approaches when we shall only govern the vulgar and the deformed. This will put us in an ill humour, and then we will excommunicate all we can.

It is not thus at Rome and the other European states. When they have chanted a beautiful mass with grand chorusses, in four parts, to St. John de Latran, or St. Peter, and when twenty eunuchs have trilled forth a motet, their business is done; they go in the evening and drink chocolate at the opera of St. Ambrose, and no body dreams of having any thing more to say to the saints on that day. They take care not to excommunicate signora Cuzzoni, signora Faustina, or signora Barbarini, much less signor Farinelli, who is a knight of Calatrava, and an actor at the opera, and who has diamonds as big as my thumb. Those people, who among them are their masters, are never their persecutors; thus you see a king who is never contradicted, is always a good king, however small his share of common sense. The insignificant people who seek to be masters, are the only wicked and spiteful people there. They, and they only, become persecutors, in order to make themselves considerable. The power of the pope in Italy, makes it unnecessary to excommunicate men of understanding with estimable talents. None but the Parisian animals with plaistered hair and trifling minds are obliged to force themselves into notice. If they do not cabal, if they do not preach up austerity, if they do not utter their exclamations against the fine arts, they are unnoticed, annihilated in the multitude. Dogs do not attract the attention of passengers, unless they snarl and bark; and people wish to be noticed. Jealousy is the great incentive to action in this world. I have told you our secret, do not betray me, and you will very much oblige me if you will procure me a private box for the first tragedy of Mr. Coldareau.

I will promise you that, said the Intendant, but finish the relation of your mysteries if you please. How does it happen that there is not one to whom I have spoken on this subject candid enough to confess, that to excommunicate a society in the service of the king, is the height

height of insolence and ridicule ? And why does no one endeavour to break through so scandalous a custom ?

I believe you have already answered this, said Brizel, when you asserted that ours is the kingdom of contradiction. To speak seriously ; France is the land of wit and folly, of industry and laziness, of fanaticism and philosophy, of gaiety and pedantry, of laws and oppressions, of good taste and impertinence. The ridiculous contradiction of the glory of Cinna, and of the infamy of those who perform Cinna ; the right of the bishops to a particular seat at the representation of Cinna, and the right to anathematize the actors, the author, and the spectators, are incompatibilities worthy of the follies of this people. However, find me throughout the world an establishment that is not contradictory.

The apostles and the fifteen first bishops of Jerusalem having been circumcised, tell me why you are not circumcised ? Why do you eat hogs puddings, since the prohibition to eat hogs puddings has never been taken away ? The apostles having earned their bread by manual labour, why do their successors wallow in riches, and seek for honours ? Joseph was a carpenter, and his divine son condescended to be bred to the business. Wherefore then has his holy vicar driven emperors from their thrones, and seated himself without scruple in their place ? Wherefore, during the primitive times did they excommunicate and anathematize all those who said that the Holy Ghost proceeded from the Father and the Son, and why at present do they damn all those who think to the contrary ?

Since it is expressly forbidden in the gospel to re-marry after a divorce, why are we permitted in this case to re-marry ? Tell me how the same marriage can be annulled at Paris, and subsist at Avignon ?

You are a friend to the theatre, explain upon what principles we applaud the brutal and factious insolence of Joad, who beheads Athalia because she would educate her grandson Joas herself, since if a priest among us should dare to attempt any thing similar against any of the blood royal, there is not a single citizen but would condemn him to the most exemplary punishment.

All depends upon custom; dancing for instance, has been a religious ceremony with almost all nations. The Jews dance for devotion. If the archbishop of Paris were to think proper at high mass, piously to dance a chaconne or an allemande, we should laugh as much as at his *billets de confession*. At Madrid, they still perform on fast days their sacramental acts. One comedian represents Jesus Christ, another the devil; one actress is the holy Virgin, another is Mary Magdalen at her toilette, Harlequin says Ave-Maria, and Judas repeats his Pater-noster.

They still continue at certain times ceremoniously to burn the descendants of our good father Abraham, that is, the Jews, and while they are roasting, they very gravely sing the pious songs of one of their kings translated out of Hebrew into bad Latin. Notwithstanding all this, there is as much common sense, politeness and wit at the court of Madrid as at any court in Europe.

At Rome they sanctify horses: were benedictions pronounced at St. Genevieve on the same subject, half Paris would proclaim it scandalous.

I have no intention to make a catalogue of all the contradictions of the world, my life would be spent in the employment. Not only do we contradict each other perpetually in our principles and actions, but all professions are contradictory to one another. It is a secret war which will never be finished. The churchman is the enemy of the lawyer, and the lawyer of the courtier, the canon of the monk, and certain comedians of certain other comedians. Each loyally gives his neighbour every disgust in his power. The worst species of all I confess, is that of pretended reformers; these are valetudinarians who are vexed to see others in health, and they forbid ragouts because they dare not eat them.

I love your frankness, said the Intendant. Let us leave them in peaceable possession of their ancient follies, they may perhaps fall of themselves, and our grand children will think us sensible people, like as we think our fathers were fools. Let us leave the Tartuffes to bawl a little longer, and to-morrow I will take you to see the comedy of Tartuffe.

The

The LIFE of MOLIERE, with a Short Account
of his PIECES.

[The following Life of Moliere was intended to have been prefixed to a 4to. edition of his works printed at Paris. An author exceedingly well known was desired to write the life, as well as a short analysis of his different works designed to have been placed at the head of each piece. Mr. Rouillé, the Editor, however, gave the preference to a person of the name of La Serre. There are more examples than one of this kind. The work of the unfortunate rival of La Serre was published at a great disadvantage, since it was only proper to accompany an edition of Moliere, for which purpose it was wrote. It has been said that some curious people have desired a republication of this trifle, and we have accordingly given it, notwithstanding the repugnance of the author, who was thus crushed by La Serre.]

THE taste which so many readers discover for trifles, and the desire of swelling that into a volume which ought to be comprised in a few pages, are reasons why the lives of celebrated men are almost always spoilt by useless details and popular stories, which are generally as false as they are insipid. To these they have frequently added unjust criticisms on their works. This happened to the edition of Racine, printed at Paris in 1722. We shall endeavour to avoid this rock in the following short history of the life of Moliere; nothing shall be said of him but what is believed to be true and worthy to be said, and no judgment will be hazarded upon his works contrary to the sentiments of an enlightened public.

Jean Baptiste Poquelin, was born in the year 1620, at a house in Paris, which is still standing under the Piliers des Halles. His father, Jean Baptiste Poquelin,

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who was the king's valet de chambre and upholsterer, as well as a broker, and Anne Boutet his mother, gave him an education too conformable to their profession, for which they designed him. He continued to the age of fourteen in their shop, having learnt nothing but his trade, and to read and write some little. His parents obtained for him the reversion of their employment under the king, but his genius called him elsewhere. It has been remarked, that those who have acquired fame by the fine arts, have cultivated them contrary to the will of their parents, and that nature in them has always been superior to education.

Poquelin had a grandfather who loved plays, and who took him sometimes to the Hotel de Bourgogne. The young man soon felt an invincible aversion to his profession. His taste for study began to appear; he pressed his grandfather to obtain permission for him to go to college, and he at last extorted the consent of his father, who gave him an allowance, and sent him as a day scholar to the Jesuits, but it was with the repugnance of a citizen, who believed the fortune of his son entirely spoilt if he became studious.

The young Poquelin made that kind of progress at college which might be expected from the earnest desire he expressed to be sent there. He continued his studies at this place five years, and went through the various classes with Armand de Bourbon, first prince of Conti, who afterwards became protector of letters and of Moliere.

There happened to be then in the college two youths, who afterwards acquired great reputation in the world. These were Chapelle and Bernier, the latter known by his voyages to the Indies, and the other by his natural and easy verses, which gained him the more reputation because he was not ambitious of becoming an author.

Chapelle was the natural son of L'Huillier, a man of fortune, who took particular care of his education, and to incite emulation, he gave him young Bernier for a companion in his studies, whose parents were very poor. Instead of giving his natural child an ordinary precep-

tor taken at hazard, as is the custom with many fathers to their legitimate children who bear their names, he engaged the celebrated Gassendi to be tutor to his son.

Gassendi having happily discovered the genius of Poquelin, associated him in the studies of Chapelle and Bernier. There never was a more illustrious master, nor one who was more happy in illustrious pupils. He instructed them in the Epicurean philosophy, which tho' equally false with the others, had at least more method, more the resemblance of truth, than that of the schools, and was without its barbarity.

Poquelin continued to improve himself by the lessons of Gassendi, and when he left the college, received a set of moral principles from this philosopher, which were more useful than his physics, and from which he very rarely deviated during the course of his life.

His father having become infirm and incapable of working, he was obliged to supply his place in his employment near the king, and while he attended Louis XIII. in Paris, his passion for the stage revived with all its force.

The theatre was then beginning to flourish; that part of the Belles Lettres which is so much despised in mediocrity, contributes to the glory of a state when brought to perfection.

Before the beginning of the year 1625, they had no comedians resident at Paris. Some farcical performers went, as in Italy, from city to city. They played the pieces of Hardy, of Moncretien, or of Baltason Baro. These authors sold their works to the comedians for ten crowns a piece.

Pierre Corneille rescued the theatre from barbarism and contempt, towards the year 1630. His comedies, which were as good for his age, as they would be bad for ours, were the cause of a company of comedians being established at Paris. The delight that the Cardinal de Richlieu took in these spectacles, presently after brought the taste for theatrical performance into fashion,

and there were more particular societies of performers then, than there are now.

Poquelin associated himself with some young people who had a talent for declamation, and they played in the Fauxbourg St. Germain, and in the Quartier St. Paul. This society soon eclipsed all the others, and were called the illustrious theatre. We may see by a tragedy called Artaxerxes, written at this time by a person of the name of Magnon, and printed in 1645, that it was represented upon the illustrious theatre.

It was at this period that Poquelin feeling his genius, took the resolution to deliver himself to its guidance, to become at once author and comedian, and to derive from his talents utility and glory.

We know that among the Athenians, authors often played in their own pieces, and were not thought dishonoured by speaking with grace before their fellow citizens. He was more encouraged by that idea, than retarded by the prejudices of his age. He took the name of Moliere, and in changing his name, he followed the example of the Italian comedians, and of those of the Hotel de Bourgogne. A person, the name of whose family was Le Grand, called himself Belleville, in tragedy, and Turlipin in farce, whence is derived the word Turlupinage. Hugues Gueret was known in serious pieces by the name of Flechelles; in farce he always played a certain part that they called Gautier-Garguille. Harlequin and scaramouch were only known by their theatrical names. There had been a former comedian called Moliere, the author of the tragedy of Polixène.

The new Moliere was unknown during all the time of the civil wars in France: he employed these years to cultivate his talent and prepare some pieces. He made a collection of Italian scenes from which he composed some little comedies for the provinces. These first rude unformed essays had more of the bad taste of the Italian theatre, whence he took them, than of his own genius, which had not had an opportunity of displaying its powers. Genius extends or contracts itself according as it is influenced by the things around us. He wrote for

the provincial theatres *Le Docteur Amoureux*, *Les trois Docteurs Rivaux*, *Le Maître d'Ecole*, works, of which nothing remains except the titles. There are two pieces of this kind preserved by the curious; the one is *Le Medecin Volant*, and the other *La Jalousie de Barbouille*. They are in prose, and without interruption. Some of the phrases and incidents of the first are inserted in *Le Medecin Malgré Lui*; and in *La Jalousie de Barbouille*, there is a rude sketch of the third act of *George Dandin*.

The first regular five-act piece which he composed was *L'Etourdi*, it was represented at Lyons in 1653. They had in that city a company of country comedians, who were abandoned as soon as Moliere's company appeared.

Some of the actors belonging to this old company joined Moliere, and he departed from Lyons for the states of Languedoc, with a tolerable good company, composed principally of the two brothers named Gros-René, of Duparc, a pastry-cook from the street St. Honore, and the females were Duparc, Bejart and De Brie.

The prince of Conti who had assembled the states of Languedoc at Béziers, recollected that he had seen Moliere at college, and gave him a distinguished protection. He played before the prince *L'Etourdi*, *Le Depit Amoureux*, and *Les Precieuses Ridicules*.

This last little piece being composed in the country, sufficiently proves that the author had only the ridiculous manners of the provincials in view, but he afterwards found that the work might please the court and the city likewise.

Moliere was then thirty-four years old; this was the age at which Corneille wrote the *Cid*. It is very difficult to succeed before that age as a dramatic writer, as it requires a thorough knowledge of the world, and of the human heart.

They pretend that the prince of Conti would have made Moliere his secretary, and that happily for the glory of the French theatre, Moliere had the resolution to prefer his theatrical talent to so honourable an employment. If this be true, it does equal honour to the prince and the poet.

After travelling for some time over all the provinces and playing at Grenoble, Lyons, and Rouen, he came at last to Paris in 1658. The prince of Conti introduced him to Monsieur, the only brother of Louis XIV. and Monsieur presented him to the king, and the queen-mother. He and his company performed the tragedy of *Nicomède* before their majesties the same year, upon a theatre raised by order of the king in the guard house of the old Louvre.

There had been comedians established for some time at the Hotel de Bourgogne, who at first assisted this new company. After the representation of *Nicomède*, Moliere advanced to the front of the stage, and took the liberty to make a discourse to his majesty, in which he thanked the king for his indulgence, and with great address praised the comedians of the Hotel de Bourgogne, whose jealousy he had reason to fear; he concluded with demanding permission to perform a piece of one act, which he had played in the country.

The fashion of representing these little farces after plays, had been lost at the Hotel de Bourgogne. He accepted Moliere's proposal, and they immediately played *Le Docteur Amoureux*. Ever since this time the fashion of giving entertainments after five act pieces has continued.

The establishment of Moliere's company being permitted at Paris, they became resident there; and partook of the theatre du petit Bourbon with the Italians, who had been in possession of it for some years.

Moliere's company performed on Tuesdays, Thursdays and Saturdays, and the Italians on the other days.

The company of the Hotel de Bourgogne likewise only played three times a week, except when they had new pieces.

From this time Moliere's company took the title of *la troupe de Monsieur*, who was their protector. Two years afterwards, in 1663, he granted them the hall of the palace royal, that the cardinal de Richlieu had built for the representation of *Mirame*, a tragedy, in which that minister had composed more than five hundred verses.

The

The hall is as foolishly constructed as the piece for which it was built; and I cannot help remarking, that to this day we have not a theatre that is supportable. This is a Gothic barbarism with which the Italians reproach us, and with reason. The good plays are in France, and the good playhouses in Italy.

Moliere's company kept possession of this theatre till the death of their chief; it was then given to those who had the patent for the opera, though it is less proper for singing than for declamation.

From 1658 to 1673, that is to say, in fifteen years, he produced all his pieces to the number of thirty. He attempted to play in tragedy, but he did not succeed; he had a volubility and a kind of hiccup in his voice that did not agree at all with serious speaking, but which had a happy effect in comedy. The wife of one of the best comedians we have had, has given the following description of Moliere:

“ He was neither too fat nor too lean, rather tall
“ than short, had a noble presence and a fine leg, his
“ walk was grave and his air very serious, his nose and
“ mouth were large and his lips thick, his complexion
“ dark, and his eyebrows black and large, and the dif-
“ ferent movements he gave them, rendered his counte-
“ nance extremely comic. With respect to his cha-
“ racter, he was gentle, complaisant and generous,
“ delighted much to harangue, and when he read his
“ pieces to the comedians he desired them to bring their
“ children that he might take hints from the emotions
“ of nature”.

Moliere acquired a vast number of partisans in Paris, and almost as many enemies. He taught the public to distinguish good comedies and to criticise himself too severely. The same spectators who applauded mediocrity in other authors, revolted against the least defects of Moliere with severity. Men judge according to the expectations they have formed, and the least defects of a celebrated author, added to public malignity, is sufficient to overthrow a good work. Hence Britannicus and the Plaideurs of Mr. Racine were ill received. Hence
l'Avare,

l'Avare, *le Misanthrope*, *les Femmes Savantes* and *l'Ecole de Femmes* had no success at first.

Louis XIV. who without cultivating them, had a good natural taste and understanding, often by his approbation brought back the court and the city to the pieces of Moliere. It had been happy for the nation not to have needed the decisions of its master to enable it to judge properly. Moliere had cruel enemies; and, above all, the bad authors of that time and their cabals and protectors: they raised the devotees against him, they imputed scandalous books to him, they accused him of exposing the particular foibles of powerful men, when he only exposed vice in general; and he had been crushed by these accusations had not this same king who encouraged and supported Racine and Desperaux, protected Moliere also.

He had in reality no more than a pension of a thousand livres, and his company had but seven thousand. The fortune which he acquired by the success of his works put him in a situation not to wish for more. His whole fortune amounted to thirty thousand livres *per ann.* a sum that at that time was almost double in real value to the same sum now.

The credit he had with the king was apparent enough by the canonship which he obtained for the son of his physician. His physician called himself Mauvilain. All the world knows that Moliere being one day at dinner with his majesty, the king said to him, *You have a physician, Moliere. what does he do for you?* Sire, answered the comedian, *we chatter together, he orders me certain remedies which I never make use of, and I am cured.*

He made the most wise and noble use of his riches, by receiving at his house men of the best company, the Chapelles, Jonscas, Des-Barreaux, &c. who made pleasure consistent with philosophy. He had a country seat at Auteuil, where with such companions he often relieved and diverted his mind, after the fatigues of his profession, which are far greater than they are usually thought to be. Le Maréchal de Vivonne, known by his wit and his friendship for Desverreaux, often visited Moliere,

Moliere, and lived with him like Lelius with Terence. The great Condé insisted that Moliere should often come to see him, and declared he always found himself improved by his conversation.

He employed one part of his revenue in liberalities, which went much farther than that which in other men is called charity. He often encouraged those young authors, who discovered marks of genius, by considerable presents: it is perhaps to Moliere that France is indebted for Racine. He engaged the young Racine who came from Port Royal to labour for the theatre at the age of nineteen. He employed him to compose the tragedy of Théagène and Cariclée, and though the piece was too weak to be played, he made the young author a present of an hundred Louis, and gave him the plan of the Frères Ennemis.

It may not perhaps be unnecessary to mention, that about the same time, that is to say, in the year 1661, Racine, having made an ode upon the marriage of Louis XIV. Mr. Colbert sent him a hundred Louis in the name of the king.

It is very disastrous for the honour of letters, that Moliere and Racine quarrelled afterwards; men of such great genius, and where one had been the benefactor of the other, ought always to have continued friends.

He brought up and formed another person, who for the superiority of his talents and the singular gifts he received from nature, deserves to be known to posterity. This was the comedian, Baron, who has stood unrivaled and alone both in tragedy and comedy. Moliere took the same care of him that he would have done of his own son.

Baron one day came to tell him that a country comedian, whose poverty prevented him from presenting himself, intreated some little succour to enable him to join his company. Moliere understanding that it was a person named Mondorge, who had formerly been his comrade, he asked Baron how much he thought it was necessary to give him; he replied at random, *four pistoles*. *Give him four pistoles for me*, said Moliere, *and there are twenty*
which

which you must give him for yourself; to which present he added a magnificent stage drels. These are trifles, but they delineate character.

There is another anecdote which deserves still more to be related. He had one day given a piece of money to a beggar, and had not gone far before the poor fellow came running after him, and said to him, *Sir, you have given me a louis d'or, I cannot suppose you meant to give me so much, and I am come to return it. Hold, my friend,* said Moliere, *there is another;* and immediately exclaimed, *where will virtue go to hide herself.* By this we may see he reflected upon every thing which presented itself to him, and that he studied those passions he wished to paint.

Moliere, though happy in his success, his protectors, his friends, and his fortune, was miserable in his own house. In 1661, he had espoused a young woman the daughter of La Bejart, by a gentleman whose name was Modéne. It has been said, that Moliere was himself her father, and the assiduity with which this calumny was propagated, engaged several persons as carefully to refute it, and they have proved that Moliere was not acquainted with the mother till after this daughter was born. The disproportion of age, and the temptations to which a young and beautiful actress is exposed, rendered this marriage unhappy; and Moliere, philosopher as he was in other respects, at home was exposed to disgust, to afflictions, and sometimes to the same ridiculous situations which he had so often exposed upon the stage. So true is it that these men, who are superior to the rest of mankind by their talents, approach very near them to in their foibles. But wherefore should talents make men superior to humanity.

The last piece he composed was the *Malade Imaginaire*. His lungs had been so much affected for some time that at intervals he spit blood. The third day of the run of the comedy he felt himself more incommoded than usual, and was advised not to play that night, but he would make an effort, and that effort cost him his life.

He

He was seized with a fit in pronouncing *Juro* in an ecstasy, at the reception of the *Malade Imaginaire*, and was brought dying back to his house in the street *de Richlieu*. He was assisted in his last moments by two of those religious sisters who come to beg at Paris during lent, that lodged with him, and expired in their arms, suffocated by the blood that came out at his mouth, on the 17th of February, 1673, in the fifty third year of his age. He left only one child, a daughter, who was very witty. His widow married a comedian called Guérin.

His having had the misfortune to die without the performance of religious rites, together with the prevailing prejudices against plays, determined *Harlay de Chanvalon*, archbishop of Paris, so well known by his amorous intrigues, to refuse Moliere christian burial. The king regretted him; and this monarch, to whom he had been a domestic and a pensionary, had the goodness to intercede with the archbishop in his behalf, that he might be interred in the church. The curate of St. Eustace, in which parish his residence was, would not assist at the funeral. The populace, who only knew Moliere as a comedian, and who were ignorant that he had been an excellent author, a philosopher and a great man in his profession, gathered in multitudes around the door on the day of burial: his widow was obliged to fling money among them from the window, and these silly wretches, who had, they knew not why, disturbed the funeral, afterwards accompanied the body with respect.

The difficulty they made to grant him christian burial, and the injustice he had sustained during his life, engaged the famous father Bohours to compose that kind of epitaph, which of all those that have been made for Moliere, is the only one that deserves to be preserved, and the only one that has not been inserted in that false and foolish account of his life, which they have always hitherto put at the head of his works.

The

The City and the Court have been reformed by thy Labours,
 And what has been thy recompence?
 The French shall Blush hereafter at the Remembrance
 Of their Neglect.
 They have sinned against a Comedian who studied
 For their Refinement
 And their Glory.
 And there is nothing wanting,
 Moliere,
 To make thy fame compleat,
 But that amongst other vices which thou hast so well delineated,
 Thou should'st also have painted
 Their Ingratitude.

I have not only omitted to insert in this life of Moliere those popular tales which are related concerning Chapelle and his friends, but I am obliged to say that these tales, adopted by Grimarest, are very false. The late Duke of Sully, the last Prince of Vendôme, and the Abbé de Chaulieu, who were all companions of Chapelle, have assured me, that those trifling accedotes were not worthy of credit.

L'ETOURDI, OU LES CONTRE-TEMS,

A Comedy of five acts, in verse, played first at Lyons in 1653, and afterwards at Paris in the month of December, 1658, at the Theatre du petit Bourbon.

This is the first comedy that Moliere played in Paris, and is composed of several small intrigues, very much independent of each other; this was the taste of the Spanish and Italian theatres which had been introduced at Paris. Comedies were then nothing more than a string of strange adventures, in which they never thought of painting manners. The stage was not then as it is now, the representation of human life. The humiliating custom of keeping fools, among the great, which was then the fashion, had infected the theatre, where nothing but vile buffoonery was to be seen, and from whence came our present race of merry andrews; thus the actors instead of shewing the master a picture
 of

of himself, exhibited nothing but a ridiculous imitation of his fool. The true comedy could not appear in France, till society and gallantry, its only proper sources, had given it birth. Comedy should seize the moment in which men deliver themselves over to the dominion of passion, character and ridicule, this is the only time when those who have the ability to shew men as they are, should take occasion to study them, and only when this is done, will these spectacles be assiduously frequented. Neither was it till after Moliere had seen Paris, and the court had become acquainted with men and manners, that he painted them in such lively and lasting colours.

The connoisseurs have said, that the title of the above comedy, should only have been *Le Contre-tems*. L  lie in restoring a purse that he had found, and in rescuing a man that was attacked, was rather generous than forgetful. His valet appears more forgetful than himself, since he had never recollection enough to inform his master of what he intended to do next. The denouement which has so often been a stumbling block to Moliere, is not better here than in his other pieces, and this fault is more inexcusable in a comedy of intrigue than in one of character.

We are obliged to say (and it is principally to foreigners that it is said) that the stile of this piece is weak and negligent, and that there are in it a great number of grammatical errors. We find in the works of this admirable author not only the vice of misconstruction, but many improper and obsolete words likewise, and three of the greatest authors of the age of Louis XIV. Moliere, la Fontaine, and Corneille, ought to be referred to on grammatical precision, but with the utmost precaution. We ought to apprize those who study our language from the writings of our best authors, of these little defects, that they may not take them for authorities.

L'Etourdi, however, had more success than the *Misanthrope*, *l'Avare* and *les Femmes Savantes* have since had. Before this they knew no better, and the reputation of Moliere had not then given offence. The only good comedy the French theatre possessed at this time was *le Menteur*.

LE DEPIT AMOUREUX.

A comedy of five acts, in verse, represented at the theatre du petit Bourbon in 1658.

Le Depit Amoureux, was played at Paris immediately after l'Etourdi, and is likewise a piece of intrigue, but of another kind to the preceding, the plot being single. The critics have found but little resemblance of truth and nature in the incident of the girl disfigured in men's cloaths. The plot has the defect of a romance without its interest; and the fifth act, which is employed to unravel this intrigue, is neither lively nor humorous. They admire in the Depit Amoureux, the quarrel and reconciliation of Erasme and Lucile. Success is always certain, both in tragedy and comedy, to those scenes which represent that passion, which of all others is the dearest to man in its most interesting circumstances. The little ode of Horace, *Donec gratus eram tibi*, has been regarded as the model of all these scenes which are now become common-place.

LES PRECIEUSES RIDICULES,

A comedy of one act in prose, played first in the country, and afterwards for the first time in Paris, at the Theatre du petit Bourbon, in the month of November, 1659.

When Moliere presented this comedy, the furor of being thought witty was become more than ever the fashion. Voiture had been the first in France who had written that ingenious kind of gallantry, in which it is so difficult to avoid being insipid and affected. His works, in which are so many true beauties intermixed with so much false wit, were the only models, and almost all those who piqued themselves upon being witty, imitated nothing but his defects. The romances of Madam Scuderi had compleated the ruin of taste. There reigned in the generality of conversations a mixture of bombast, gallantry, romantic sentiments and fantastic expressions, which

which composed a jargon entirely new and unintelligible, but which was very much admired. The provinces, which as they generally burlesque the fashions, had in this particular also heightened the ridicule, and the women who valued themselves for this sort of wit, had called themselves *Precieuses*. This name, which was afterwards so decried in consequence of Moliere's comedy, was then thought honourable, and Moliere himself says in his preface, that he has every respect for *les veritable Precieuses*, and that he only meant to expose the false ones.

This little piece, which was wrote purposely for the provinces, was applauded and played four months at Paris. The company for the first time doubled the price of admittance, which till then was no more than ten-pence to the pit.

At the first representation, Menage, a celebrated man in these times, said to the famous Chapelain, *you and I have both adored the silly things we are come here to see so well criticised, believe me we must burn what we have worshipped*, at least this is what we find in the *Menagina*, and this is very likely with respect to Chapelain, who was then in great estimation, though the worst poet that had ever been seen, and who spoke the jargon of the *Precieuses ridicules* with Madame de Longueville. This lady presided at those assemblies which the Cardinal de Retz calls *combats spirituelles* (trials of wit) and in which they had become so very refined that they did not understand one another.

The piece is without plot, but abounds in character. There are few defects of language in it, because Moliere is a greater master of stile in prose, than in verse, and being to criticize the language of the wits of the day, he took the greater care of his own. The great success of the piece occasioned more critiques, than both the *L'Etourdi* and the *Depit Amoureux* had done. One Antoine Bodeau wrote the *Veritable Precieuses*; Moliere's work was parodied; but all these parodies and criticisms are fallen into the obscurity they merit.

The desire of being distinguished has again given birth to the stile of the *Precieuses*, and we still find it in many modern

modern books. One author*, in treating seriously of our laws calls a subpœna a stamped compliment: another† writing to his mistress in the clouds, tells her, *your name is written in large letters upon my heart—I would compare you to an Iroquois, eating half a dozen hearts for amusement.* A third,‡ calls a sundial a solar register, and a large radish a phenomenon of the kitchen garden. This stile has again appeared upon the same theatre, where Moliere had turned it so finely into ridicule; but the whole nation has discovered its good taste in despising that affectation in authors, who were otherwise well esteemed.

LE COCU IMAGINAIRE.

A comedy of one act, in verse, represented at Paris the 28th of May, 1660.

Le Cocu Imaginaire was played forty times successively, though in the summer season, and while the marriage of the king detained the whole court from Paris. It is a piece, of one act in which some character appears, and whose plot is naturally comic. One may observe that Moliere improved in his manner of writing, the longer he continued at Paris. The stile of Le Cocu Imaginaire is far superior to that of his former pieces in verse, and there are by no means so many errors in the language. It is true, there are some absurdities in this comedy.

La bière est un séjour par trop mélancolique
Et trop mal-sain pour ceux qui craignent la colique.

There are obsolete expressions likewise, and terms which politeness has now banished from the theatre, such as *carogne, cocu, &c.* (vile brim, cuckold.)

* Toureil.

† Fontenelle.

‡ La Motte.

The denouement which Villebrequin effects, is one of the worst managed and least happy of any in Moliere. This comedy had the fate of most good works; it had false critics and vile imitators. One Donneau had a *Cocu Imaginaire* performed at the Hotel de Bourgogne, towards the end of 1661.

DON GARCIA DE NAVARRE; or, LE PRINCE JALOUX.

An heroic comedy of five acts, in verse, represented for the first time, on the 4th of February, 1661.

Moliere played the part of Don Garcia; and it was in this comedy that he learnt he had not the proper requisites of a serious actor. The piece and the performer were exceedingly ill received. The play, which was an imitation from the Spanish, has never been played since its disgrace. The rising reputation of Moliere was very much hurt, and his enemies triumphed for some time. Don Garcia did not appear in print till after the death of the author.

L'ECOLE DE MARIS.

A comedy of three acts, in verse, represented at Paris, the 24th of June, 1661.

There is great reason to suppose that Moliere had at least the outline of these first pieces already prepared, since they appeared in so quick a succession.

L'Ecole de Maris, established for ever the reputation of Moliere. It contains both plot and character, and if he had never wrote any thing but this piece, he would have passed for an excellent comic author.

It has been said that L'Ecole de Maris is a copy of the *Adelphi* of Terence: if it were true, Moliere would have deserved more applause, for having introduced the good taste of ancient Rome into France, than censure for his plagiarism. But the *Adelphi* can at the most have furnished nothing more than the idea of L'Ecole de Maris. In the *Adelphi*, there are two old men of

different humours, who each give a different education to their children under their tuition; there is likewise in *L'Ecole de Maris*, two tutors, the one severe and the other indulgent, here is the whole resemblance. There is very little plot in the *Adelphi*, that of *L'Ecole de Maris* is fine, interesting and comic. One of the women in Terence's comedy who ought to have been the most active person in the whole intrigue, never makes her appearance but to be brought to bed. The *Isabelle* of Moliere supplies the scene almost continually with wit and dignity, and mixes a deal of good sense in her answers and repartees to her tutor. The denouement of the *Adelphi* has no resemblance to truth, it is not in nature that an old man who has been sixty years morose, severe and covetous, should immediately become gay, complaisant and liberal. The denouement of *L'Ecole de Maris* is the best of all Moliere's pieces; it is probable, and rises naturally from the disposition of the plot, and what is still better, it is extremely comic. The stile of Terence is pure and sententious, but rather cold, with which Cæsar, who was himself excellent, reproached him. Moliere is more chaste in this piece than in his others. The French author equals almost the pure diction of Terence, and is far beyond him in plot, character, denouement and humour.

LES FACHEUX.

A comedy of three acts, in verse, represented at Vaux before the king, in the month of August; and at Paris, upon the theatre du Palais Royal, the 4th of November, the same year, 1661.

Nicholas Fouquet, inferior superintendant of the finances, engaged Moliere to compose this comedy for the famous feast which he gave to the king and queen-mother, in the house of Vaux, called at present Villars. Moliere had only fifteen days to prepare it in, he had some detached scenes already wrote, to which he added some new ones, and compleated the comedy, which, as he says in his preface, was composed, studied and played

in

in less than fifteen days. Grimarest, the author of a life of Moliere, pretends that the king himself furnished the character of the chasseur, (hunter,) but this is false. Moliere had not at this time so free an access to the king, nay more, it was not the prince who furnished the feast, it was Fouquet, and he would contrive to give the king the pleasure of being surprised.

The piece pleased the king exceedingly, though the dances for the interlude were very ill contrived, and ill executed. Paul Pellisson, a celebrated literary man, composed the prologue in verse, it was a panegyric upon the king, and exceedingly applauded by the whole court, and particularly by his majesty; nevertheless, the giver of the feast, and the author of the prologue, were both put in prison a short time after. Nay, they even wanted to have them arrested in the midst of the feast. A sorrowful example of the instability of the fortunes of the court.

Les Facheux is not the first work which we have seen upon our theatre, in which the scenes are absolutely independent of each other. Les Visionnaires de Desmarets was in this taste, and had had such prodigious success, that all the wits of those times called it the *inimitable comedy*; but the taste of the public is so much refined at present, that this comedy could not appear inimitable now, except by its excessive impertinence. Its ancient reputation gave the comedians courage to perform it in 1719, but they were not permitted to finish the representation. There is no danger of Les Facheux falling into the like discredit. Authors were then extravagant, because they were unacquainted with nature. They painted chimeras at hazard, the false, the low, the grotesque were predominant; Moliere was the first who felt the true, and consequently the elegant. It was this piece which brought him more intimately acquainted with the court and its master, and when, sometime after, he played it at St. Germain, the king commanded him to add the scene of the chasseur. They pretend that the chasseur was meant for the Count de Soyecourt. Moliere, who understood nothing of the jargon of the chase, desired

the count himself to dictate to him such terms as he had occasion to use.

L'ECOLE DE FEMMES.

A comedy of five acts, in verse, represented at Paris, upon the theatre du Palais Royal, the 26th of December, 1662.

The theatre of Moliere, which had given birth to good comedy, was abandoned during the half of the year 1661, and all 1662, for certain farces that were half Italian and half French, which were then brought into esteem by the return of a famous Italian performer of pantomime, known by the name of Scaramouch. The very same spectators who applauded without reserve these monstrous farces, found a difficulty to be pleased by L'Ecole de Femmes, a comedy of a new species, in which, though all is recitation, all appears to be in action.

It was very much followed and very much criticised, as appears by the Gazette de Loret.

The piece, though critic circles do explode
To see it play'd, is still so much the mode,
No subject yet, however great its end,
Could so attract spectators to attend.

It is said to be in every respect inferior to L'Ecole de Maris, and especially in the denouement, which is as preposterous in L'Ecole de Femmes, as it is happy in L'Ecole de Maris. They object very much to some expressions also, which are unworthy of Moliere; they disapprove of *le corbillion*, (the basket,) *la tarta a la crème*, (cream tarts,) *les enfans faits par l'oreille*, (children made or born by the ear.) The connoisseurs however, all admire with what address Moliere knew how to please the spectators during five acts, by the sole confidence of Horace to the old man, and by simple narrative. It should seem, that a subject treated in this form, could not furnish above one act. But this is the true character of genius, to diffuse fecundity upon a sterile subject, and to give variety
to

to what appears uniform. We may observe as we pass, that herein consists the great art of the tragedies of the admirable Racine.

LA CRITIQUE DE L'ECOLE DE FEMMES.

A little piece of one act, in prose, represented at Paris upon the theatre du Palais Royal, on the 1st of June, 1663.

This is the first work of the kind that appeared upon the stage. It is properly a dialogue, and not a comedy. Moliere composed it rather as a satire upon his critics, than as a defence of the feeble parts of *L'Ecole de Femmes*. We acknowledge he was wrong to justify his cream tarts, and some other vulgarities which had escaped him; but his enemies were more to blame to take advantage of these small defects to condemn a good work.

Boursault imagined he beheld his own portrait in that of Lisidas, and in revenge, composed for the *Hotel de Bourgogne* a little piece in the manner of *La Critique de l'Ecole de Femmes*, intitled, *le Portrait du Peintre, or la contre Critique*.

L'IMPROMPTU DE VERSAILLES.

A little piece of one act in prose, represented at Versailles the 14th of October, 1663, and at Paris the 4th of November in the same year.

Moliere wrote this little work partly to justify himself before the king respecting several calumnies, and partly in answer to Boursault's piece. It is an extravagant and cruel satire, in which Boursault is mentioned by his own name; the liberty of the ancient Greek comedy did not exceed this, and it had been much to the honor and credit of the public if both the satire of Boursault and that of Moliere had been suppressed. It is shameful that men of genius and abilities should expose themselves by these little wars to the laughter of Fools. Authors should not be permitted to particularize individuals

viduals except when they have been publicly dishonoured by them, as in the case of Rolet and Wasp. Moliere, who was sensible of the weakness of this piece, did not print it.

LA PRINCESSE D'ELIDE; OU, LES PLAISIRS DE
L'ISLE ENCHANTEE.

Represented the 7th of May, 1664, at Versailles, at the grand feast that the king gave to the queens.

The feasts which Louis XIV. gave in his youth, merit a place in the history of this monarch, not only by their singular magnificence, but likewise by the delight he took in employing celebrated men of every kind, who contributed at the same time to his pleasures, and to the refinement and glory of the nation. It was at the feast, known by the name of the Enchanted Island, that Moliere first performed, *la Princesse d'Elide*, a ballad comedy, in five acts. The first act, and the first scene of the second only are in verse, Moliere, pressed by time, wrote the rest in prose. The comedy had great success in a court, which breathed nothing but joy, and which in the midst of so many pleasures could not pass a severe judgment upon a piece composed in haste to embellish the feast.

La Princesse d'Elide was afterwards played at Paris, but it had not the same good fortune when despoiled of its ornaments, and those other happy circumstances which had contributed so much to its success. The comedy of *La Mere Coquette*, by the celebrated Quinault, was played the same year; this was almost the only good comedy they had seen in France except the plays of Moliere, and this gave him emulation. It very rarely happens that works composed for the feasts succeed upon the Parisian theatre. Those to whom the feasts is given, are always indulgent, but a free public is always severe. The serious and gallant did not suit the genius of Moliere, and that species of poem wanting
the

the pleasantry of comedy, and the grand passions of tragedy, usually degenerates to insipidity.

LE MARRIAGE FORCÉ.

A little piece of one act, in prose, represented at the Louvre, the 24th of January, 1665, and at the theatre du Palais Royal, the 15th of December the same year.

This is one of those little farces which Moliere had acquired the habit of playing after his five-act pieces. There are some scenes in it taken from the Italian, and one may observe in it more buffoonery than art and contrivance, it was accompanied at the Louvre by a little ballet in which Louis XIV. danced.

L'AMOUR MEDECIN.

A little comedy of one act in prose, represented at Versailles, the 15th of September, 1665; and upon the theatre du Palais Royal the 22d of the same month.

L'Amour Medecin, is an impromptu wrote for the king, in five days; this piece however has more true comedy than *Le Mariage Forcé*. It was accompanied by a musical prologue, which was one of the first compositions of Lully.

It is the first work, in which Moliere has exhibited physicians who were then very different from what they are at present; they went almost always in their gowns and bands, and held their consultations in Latin.

If the physicians of our time are not better instructed in the operations of nature, they know the world better. They have learnt that the great art of a physician is the art of pleasing. Moliere may have contributed to strip them of their pedantry, but the manners of the age, which are every way altered, have contributed more. The spirit of reason is introduced in all the sciences, and politeness in every station.

DON

DON JUAN; OU, LE FESTIN DE PIERRE.

A comedy of five acts, in prose, represented upon the theatre du Palais Royal, 15th of February, 1665.

The origin of the extravagant comedy of *Le Festin de Pierre*, is from *Triso de Molina*, a Spanish author. It is entitled, *El Combidado de Piedra*; the Guest of Stone. It was afterwards played in Italy under the title of *Convitato di Pietra*. The Italian company of comedians played it at Paris, and called it *Le Festin de Pierre*. It had great success upon this irregular stage, they did not revolt against a monstrous assemblage of buffoonery and religion, of pleasantry and horror, nor against the extravagant prodigies which are the subject of this piece, a statue that walks and speaks, and the flames of hell swallowing up a debauchee occasioned no rebellion among the wits of harlequin's theatre; whether it was that the piece was interesting, whether the play of the comedians embellished it; or which is most probable, though *Le Festin de Pierre* was no entertainment to people of taste, whether it might not be so to the multitude who delight in the marvellous.

Villiers, a comedian belonging to the Hotel de Bourgogne, put *Le Festin de Pierre* in verse, and it had some success upon that theatre. Moliere likewise thought proper to handle this extravagant subject. The hurry he was in to attract the spectators from the Hotel de Bourgogne, occasioned him to content himself with giving his comedy in prose. This was then an unheard of novelty for a piece of five acts. We may see by this, what power habit has over man, and how much it is concerned in forming the different taste of nations. There are some countries where they cannot entertain an idea that a comedy in verse can succeed; the French, on the contrary, think it impossible to support a long comedy without rhyme. This prejudice made them give the preference to the piece wrote by Villiers, rather than to that wrote by Moliere, and this prejudice continued so long, that Thomas Corneille, in 1673, immediately after the death of Moliere, put
his

his *Festin de Pierre* into verse. It had then great success upon the theatre in the street Guénegaud, and it is after that very manner that they play it at present.

At the first representation there was a scene in Moliere's comedy, between don Juan and a beggar, in which don Juan asked the beggar, how he passed his life in the forest. *In praying to God*, answered the beggar, *for those good people who give me alms. So you pass your life in praying to God*, said don Juan. *If that is the case, you ought to be very much at your ease. Alas!* Sir, said the beggar, *I have very often nothing to eat. That is impossible*, replied don Juan, *God never suffers those to die of hunger, that pray to him from morning to night. However, hold your hand, there is a louis d'or, but I give it for the love of humanity.*

This scene was entirely consistent with the impious character of don Juan, but as weak minds might make a bad use of it, it was suppressed at the second representation, and this retrenchment was perhaps the cause of the little success of the piece.

The person who wrote this, has seen the scene in Moliere's own hand writing; it is in the custody of Pierre Marcaffus, a friend of the author's. The scene has been since printed.

LE MISANTROPE.

A comedy of five acts, in verse, represented upon the theatre du Palais Royal, 4th of June, 1666.

Europe has looked upon this work to be the master piece of high comedy. The subject of the *Misanthrope*, has succeeded among all nations a long time before Moliere and after him. In effect there are few things which more powerfully engage the attention than a man who hates the human species, because he has proved their wickedness, and who is surrounded by flatterers, whose servile complaisance form a contrast to his inflexibility. This method of treating the *Misanthrope* is the most common, the most natural, and the most susceptible of comic humour, but the manner in which
Moliere

Moliere has managed it, is far more delicate, and as it furnishes far less, requires therefore the more art. He has made himself a barren subject deprived of action and of interest, his *Misanthrope* hates men more from humour than reason. There is only so much intrigue in the play as is necessary to bring the characters on and off the stage, but perhaps not sufficient to form an attachment. In recompence, all his characters have a force, a truth, and a fineness in the drawing that no comic author ever knew equal to himself.

Moliere was the first who had the art of bringing the conversations of the world upon the stage, and enlivening them with portraits. The *Misanthrope* is full of them, it is a continual picture, but it is a picture of follies that vulgar eyes could not perceive. It were needless to examine here in detail the beauties of this master-piece of wit, or to shew with what art Moliere has painted a man, who carried virtue to excess, yet whose weakness for a coquette was excessive; or to remark the conversation and charming contrast of a prude, with that extravagant coquette. Whoever reads ought to feel these beauties, which however, great as they are, would be nothing without stile. The piece is, from one end to the other, very like in stile to the satires of Desperaux, and has, of all Moliere's pieces, the greatest force of language.

When it first appeared, it gained those plaudits which it merited, but it was work for people of wit, rather than for the multitude, and still more proper to be read than to be played. The theatre was deserted on the third day. Afterwards, when the famous actor, Baron, returned to the stage after an absence of thirty years, and played the *Misanthrope*, the comedy did not attract any great concourse, and this confirms the opinion of those who said it was a play that should be more admired than followed. The little desire that they had to see the *Misanthrope* on one side, and the just esteem they had for him on the other, proves perhaps more than we imagine, that the public is not always unjust; it runs in crowds to comedies that are gay and amusing, but it has
little

little esteem for them, while it is not much diverted at those which it admires. Comedies are, in this respect, like games, there are some at which all the world plays, and there are others which are only for the strongest and most refined minds.

If we may venture to search in the human heart for the reason of that backwardness in the public to see the *Misanthrope*, we may perhaps find it in the plot of the piece, where those beauties which are delicate and ingenious are not equally lively and interesting, or in those very conversations which are so inimitable, but which are not always necessary to the plot, but rather perhaps make the action a little tedious, even while they oblige us to admire the author; or lastly, in the denouement, which well conducted and witty as it is, seems to be attended to by the public without concern, and which being the unravelling of a plot that was not very interesting, has nothing very delightful. In effect the spectator has no wish that the *Misanthrope* should espouse the coquette *Celimene*, nor has any fear that he should be detached from her. To conclude, we may take the liberty to say, that the *Misanthrope* is a satire more witty and refined than those of *Horace* and *Boileau*, and at least as well written, but there are more interesting comedies; the *Tartuffe*, for example, unites the beauties of the stile of the *Misanthrope* with a more marking interest.

We know that the enemies of *Moliere* would have persuaded the duke de Montausier, famous by his savage virtue, that he was the person meant by the *Misanthrope*. The duke went to see the comedy; and said, in coming out, that he should be very glad to resemble the *Misanthrope* of *Moliere*.

LE MEDECIN MALGRE LUI.

A comedy of three acts, in prose, represented upon the theatre du Palais Royal, August 9th, 1666.

Moliere having laid aside his *chef d'œuvre*, the *Misanthrope*, performed it again sometime after accompanied by *Le*
Medecin

Medecin Malgre Lui. An exceeding lively and farcical piece, and such a one as the bulk of the people wanted, the same as at the opera, where after learned and sublime music, they heard with pleasure those little airs which of themselves have no merit, but which all the world easily remember. These frivolous trifles serve to make them feel the most serious beauties.

Le Medecin Malgre Lui supported the *Misanthrope*. This perhaps is the disgrace of human nature, but so it is; we go to a play rather to laugh than to be instructed. The *Misanthrope* was the work of a sage, who wrote to enlighten men, and this sage was obliged to disguise his wisdom in farce to please the multitude.

LE SICILIEN; OU, L'AMOUR PEINTRE.

A comedy of one act, in prose, represented at St. Germain en Laye, in 1667, and upon the theatre du Palais Royal, the 10th of June the same year.

This is the only little piece of one act in which the author has paid attention to refinement and gallantry; the others are all farces, which generally had their foundation in buffoonery, and which are not so agreeable.

MELICERTE PASTORALE HEROIQUE.

Represented at St. Germain en Laye, before the king, at the Dance of the Muses, in December, 1666.

Moliere composed only two acts of this comedy, the king was satisfied with these two acts, in the feast of the Dance of the Muses. The public did not regret that the author never finished his work; it is in that kind of stile which is not the stile of Moliere. Whatever pains he may take, the greatest efforts of a man of wit cannot supply the place of genius.

A M P H I T R I O N.

A comedy of three acts, in verse, represented upon the theatre du Palais Royal, the 13th of January, 1668.

Euripides and Archippus had treated this subject of tragi-comedy among the Greeks; it is one of those pieces of Plautus which had the most success; they continued to play it at Rome five hundred years after his decease, and what may appear singular is, that they played it at those feasts which were consecrated to Jupiter. Those only who do not know how entirely casual the actions of men in general are, will be surpris'd that they thus publickly mocked in the theatres the same gods that they adored in the temples.

Moliere took the whole from Plautus, except the scenes of Sofia and Cleantis. Those who have said that the prologue is an imitation of Lucian, do not know the difference between an imitation and the far off resemblance of the excellent dialogue between Night and Mercury in Moliere, and between Mercury and Apollo in Lucian. There is not one pleasantry, not one word for which Moliere is indebted to the Greek author.

All those readers who are free from prejudice, know how much the French Amphytrion is superior to the Latin; they cannot say of Moliere's pleasantries what Horace said of Plautus:

Nostri proavi Plautinos & numeros &
Laudavere sales, nimium patienter utrumque.

In Plautus, Mercury says to Sofia, *thou comest with thy stitched up (or concealed) cheats*. Sofia answers, *I come with my cloaths stitched*. *Thou liest*, replies the god, *thou comest with thy feet and not with thy cloaths*. This is not the humour of our theatre. Moliere appears to have surpassed Plautus as much in that species of pleasantry, which the Romans called urbanity, as he has done in the œconomy of his piece. Among the ancients, when they wanted the spectators to be made acquainted with any event, an actor entered without ceremony, and told it in a monologue: thus, Amphytrion and Mercury come upon the stage, and tell the audience every thing they have been doing between the acts. Neither had they more art in their tragedies; this alone perhaps may teach us,

us, that the ancient theatre, however respectable, is, when compared to ours, as infancy to confirmed age.

Madam Dacier, who has done honour to her sex by her erudition, and who would have done more if with the science of the commentator she had not had wit, wrote a dissertation to prove that the *Amphitruon* of Plautus was very much above the modern one, but having heard that Moliere intended to write a comedy of *Les Femmes Savantes* (Learned Women) she suppressed her dissertation.

The *Amphitruon* of Moliere succeeded entirely and without opposition, and gave pleasure to the most simple, most vulgar, and most delicate. It was the first comedy that Moliere wrote in free verse, (*vers libre*.) They then pretended that this kind of versification was more proper for comedy than the alternate male and female rhimes, (*rimés plates*,) because they had more liberty and greater variety. The alternate rhimes in Alexandrine verses however have prevailed. The free verse is as much more difficult to make, as it appears more easy. There is a *rhythmus* very little known, which must be observed, or the poetry becomes tiresome; Corneille was unacquainted with this *rhythmus* in his *Agésilas*.

L ' A V A R E .

A comedy of five acts, in prose, represented at Paris upon the theatre du Palais Royal, the 9th of September, 1668.

This excellent comedy would have been given to the public in 1667, but that the same prejudice which prevented the success of *Le Festin de Pierre*, because it was in prose, would have had a similar effect with this piece. Moliere, that he might not immediately wound the judgment of the critics, and knowing that men must be artfully dealt with when they are wrong, gave the public time to recollect, and did not perform his *L'Avare* till the year following; when the public, who always in the end decide properly, gave it the applause it deserved. They were then taught that it was possible
to

to have exceeding good comedies in prose; and that it was perhaps more difficult to succeed in this plain stile, where the author's wit alone must be his support, than where versification, rhyme, cadence and measure lent ornaments to simple ideas, which plain prose could not embellish.

There are in the L'Avare, some ideas taken from Plautus and improved in Moliere. To Plautus he was indebted for the thought of robbing the Miser of his casket, and at the same time seducing his daughter; to him the invention of the scene where the young man comes to avow the seduction, and mistaken by the Miser for the thief, is due. But we presume to say that Plautus has not sufficiently profited by that situation, and that if he had not wanted, he had not invented it, as we may judge by the following trait: the lover does not appear till that scene; he enters without preparation or introduction, and the girl herself never appears at all.

The rest of the comedy, with its characters, plots and pleasantries, are all Moliere's, he has only imitated some lines, as in that place where the Miser speaks (which perhaps is wrong) to the spectators, and says, *is not my thief among you? Alas, they only look at me and begin to laugh.*

(Quid est quod ridetis? Novi omnes, scio fures hic esse complures.)

And that other place, where having examined the hands of his footman that he suspects, demands to see his third hand.

Ostende tertiam.

But if we wish to know the difference of stile between Plautus and Moliere, we may find it in the pictures which each has drawn of his Miser. Plautus says,

Clamat suam rem periisse, seque
De suo tigillo fumos si qua exit foras.
Quin cum il dormitum, follem obstringit ob gulam,
Ne quid animæ forte amittat dormiens;
Etiamne obturat inferiorem gutturem? &c.

He

He cries he is undone, that he is ruined if the smoke of his fire escapes out of his house. He fastens a bladder to his mouth during the night, for fear he should lose his breath. Should he not stop up his posterior mouth likewise?

These comparisons however of Plautus to Moliere, advantageous as they are to the latter, ought not to hinder us from esteeming the Latin poet, who though he had not the purity of Terence, had many other requisites, and who though inferior to Moliere, was for the variety of his plots and characters, the best comic poet Rome ever had. It must be acknowledged likewise, that in the *Miser* of Moliere, we find some vulgar expressions, such as *je sais l'art de traire les hommes*, (I know the art of milking men,) and some false jokes as, *je marierais si je l'avais entrepris le Grand Turc & la republique de Venise*, (I would marry if I had undertaken the Grand Turk and the Republic of Venice.)

This comedy, as well as the other plays of Moliere, has been translated into several languages, and played upon more than one theatre, both in Italy and England; translations however, never succeed but in consequence of the skill of the translator. An Englishman named Shadwell, whose vanity was only equalled by his bad poetry, translated it during the life of Moliere. This person says in his preface, "I think I may say without
" vanity, that Moliere's part of it * has not suffered in
" my hands; nor did I ever know a French comedy
" made use of by the worst of our poets, that was not
" bettered by them. 'Tis not barrenness of wit or in-
" vention that makes us borrow from the French, but
" laziness; and this was the occasion of my making use
" of *L'Avare*."

We may readily suppose that a man who had not wit enough to hide his own vanity, had not enough to write better than Moliere. Shadwell's piece is generally despised. Mr. Fielding, a better poet and more modest, translated the *L'Avare*, and had it performed in Lon-

* Shadwell made great additions to the play. H.

dön, in 1773. He has added some beauties in the dialogue peculiar to his nation, and his piece has had almost thirty representations, a success very uncommon in London; where the pieces that have the greatest run are not played more than fifteen times.

GEORGE DANDIN, OU LE MARI CONFONDU.

A comedy of three acts; in prose, represented at Versailles, the 15th of July, 1668, and at Paris the 9th of November, 1668.

This piece is only known by, and played under the name of George Dandin, and on the contrary, the Cocu Imaginaire, to which they had affixed the name of Sganarelle, is now always called Le Cocu Imaginaire. The title of George Dandin is perhaps more pleasant than that of Le Mari Confondu. George Dandin had great success, but if we cannot be offended at the conduct or the stile, we may a little at the subject of the piece; many people revolt against a comedy in which a married woman appoints to meet her lover. But they may consider that the coquetry of this wife is only a proper punishment for the folly of George Dandin, in marrying the daughter of a ridiculous gentleman.

L'IMPOSTEUR, OU LE TARTUFFE.

Played without interruption in public, on the 5th of February, 1669.

We are acquainted with all the impediments and misfortunes that this admirable work endured. There is a detail of them in the author's preface prefixed to the comedy.

The three first acts had been played at Versailles before the king, the 12th of May, 1664. This was not the first time that Louis XIV. who felt the value of Moliere's works, had a desire to see them before they were finished; he was very well pleased with the beginning, and of course, so were his courtiers.

It was played the 29th of November, the same year, at Rainſy, before the great Condé, and from that period the rivals of Moliere revived, the devotees began to be clamorous, the false zealots (a species of men the most dangerous of any) raised the cry against him, and seduced many well-meaning people to join in it. The author perceiving so many enemies ready to attack his person rather than his piece, waited till the furor was somewhat abated : Tartuffe lay dormant for a twelve-month, he only read it in some particular houses in which superstition had not yet entered.

Moliere having opposed the protection and zeal of his friends to the cabals of his enemies, obtained a verbal permission from the king to perform his comedy. The first representation was at Paris, the 5th of August, 1667. The day following, they were preparing to play the piece again; the assembly was the most numerous that had ever been beheld. Women of the first distinction were seated in the third boxes, and the actors were just going to begin, when an order arrived from the first president of the parliament to forbid the representation.

It was upon this occasion they pretend, that Moliere said to the audience; *Gentlemen, we were going to have given you Tartuffe, but Monsieur, the first president, will not permit us to play HIM.*

At the same time that they suppressed this work, which was the panegyric of virtue, and a satire only against hypocrisy, they permitted the performance of Scaramouche Hermite upon the Italian theatre, a piece, which, had it not been very licentious, would have been very dull, and in which a hermit in the habit of a monk, mounts upon a ladder, and goes into the chamber window of a married woman, out of which he looks at intervals, and says, *questo è per mortificar la carne.* We know the saying of the grand Condé upon this occasion : *The Italian comedians have only offended God, but the French have offended the devotees.* Some time after Moliere was delivered from his persecution, he obtained an order from the king in writing to exhibit his

his Tartuffe. His fellow comedians insisted that Moliere should have ever after two shares in the profits of the company every time this piece was played. It was performed for three months together, and will continue to be performed while there are good taste and hypocrisy in France.

This comedy, which was once thought so scandalous, is now represented as a fine moral lesson, and we may safely affirm that the discourse of Cléante, in which true and clear virtue is opposed to the weak devotion of Or-gon, is, some expressions excepted, the most forcible and elegant sermon in our language, and perhaps those who were most offended at it, were men who spoke far worse from the pulpit, than Moliere from the theatre.

Let us in particular observe the following passage.

Allez, tous vos discours ne me font point de peur ;
Je fais comme je parle, & le ciel voit mon cœur :
Il est de faux dévots, ainsi que de faux braves, &c.

Away, you cannot frighten me with words ;
I know my meaning, heaven knows my heart.
Faith may be counterfeit as well as courage, &c.

Almost all the characters of this piece are originals, there is not one but what is good, and that of Tartuffe is perfect. We admire the conduct of the whole to the conclusion, we feel its force, and observe how much the praises of the king, though not well pointed, were necessary to support Moliere against his enemies.

In the first representations, the impostor called himself Panulphe, and it was not till the last scene that they learnt his real name Tartuffe, under which his impositions were supposed to be known to the king; this excepted, the comedy was nearly as it is at present, the most remarkable alteration is in this verse.

O ciel, pardonne lui la douleur qu'il me donne !

O heaven, pardon him the grief he has occasioned me !

Which is now read,

O ciel, pardonne moi comme je lui pardonne !

O heaven, pardon me as I pardon him !

Who would believe that the success of this admirable piece was equalled by that of a comedy called *La Femme Juge & Partie*, which was played as often at the Hotel de Bourgogne, as *Tartuffe* was at the Palais Royal? Montfleuri, a comedian of the Hotel de Bourgogne, was the author of *La Femme Juge & Partie*, and believed himself equal to Moliere. A preface that they have placed at the head of a collection of the works of this Montfleuri, informs us, that Monsieur de Montfleuri was a great man. The success of *La Femme Juge & Partie*, as well as of many other indifferent comedies, was owing entirely to a particular situation that the art of the actor made interesting; but those little things which please so much in the performance, are despised by the reader. After the play of *La Femme Juge & Partie*, at the Hotel de Bourgogne, they performed *La Critique du Tartuffe*, in the prologue to which piece of criticism are the following verses :

Moliere plait assez, c'est un bouffon plaisant,
 Qui divertit le monde en le contrefaisant;
 Ses grimaces souvent causent quelques surprises;
 Toutes ses piéces sont d'agréables sotises:
 Il est mauvais poete, & bon comédien;
 Il fait rîre, & de vrai, c'est tout ce qu'il fait bien.

Buffon'ry may a merry audience please,
 So can Moliere, so can his comedies;
 His tricks we laugh at, but his works despise,
 Grimace and mimicry sometimes surprize
 A good comedian, but a poet vile,
 He can't instruct us tho' he makes us smile.

They printed twenty libels against him. A curate of Paris disgraced himself so far as to compose one of these

these pamphlets, which he began by saying, Moliere deserved to be burnt. Thus was this great man treated while living, but the approbation of an enlightened age has given a reputation that has done him ample justice. How degrading is it to a nation, and how unfortunate for men of genius, that a small number only will give them their due, while the multitude either neglect or persecute them!

MONSIEUR DE POURCEAUGNAC.

A ballet comedy of three acts, in prose, written and played at Chambord for the diversion of the king in the month of September, 1666, and represented afterwards on the theatre du Palais Royal, the 15th of November in the same year.

It was during the representation of this comedy, that Moliere's company took for the first time the title of *la troupe de roi*, (the king's company.) Pourceaugnac is a farce, but like all the other farces of Moliere, it contains scenes worthy of comedy. A great man even when he trifles, cannot help trifling with vivacity. Lully, who had not yet obtained the grant of the opera, composed the musick for the ballet of Pourceaugnac. He danced, sung, and played the violin in this piece. Every kind of excellence, every species of great talents were employed for the entertainment of the king, and every thing connected with the fine arts was honorable.

Nobody writ against Pourceaugnac. Envy does not endeavour to reduce great men to its own level, only when they elevate themselves. Far from examining this farce with severity, people of taste reproached the author with having disgraced himself and his genius too often by writing frivolous works, which did not deserve examination. Moliere replied, he was a comedian as well as an author; his interest required that he should amuse the court and attract the croud, and he was obliged to consult the income of his actors, as well as his own glory.

LE BOURGEOIS GENTILHOMME.

A ballet comedy of five acts, in prose, written and played at Chambord, in the month of October, 1670, and afterwards at Paris, the 23d of November, in the same year.

The Bourgeois Gentilhomme, is one of the most happy subjects for comedy that ridicule ever furnished. Vanity, an attribute of the human species, induces princes to take the title of kings, and bids great lords become princes, as La Fontaine describes :

Tout prince a des ambassadeurs
Tout marquis veut avoir de pages.

Each petty prince demands ambassadors,
And every marquis must have pages.

This weakness is precisely the same with that of a citizen, who would be a man of quality ; but the folly of the citizen is that alone which is sufficiently ridiculous for the theatre, for in this only is found the extreme disproportion between the man and his affected manners. It is the language and the air he imitates that makes him an object of pleasantry and laughter. These contrarieties do not exist in princes and men educated at court. They disguise all their follies by the same airs, and the same language. But the absurdity is conspicuous in a vulgar bred citizen, and where habit every moment forms a contrast that betrays the disguise of art. Affectation, when evident, constitutes the laughable of comedy, and this is the reason that common life only can furnish comic characters. The Misanthrope is admirable, the Bourgeois Gentilhomme is laughable.

The four first acts of this piece may pass for comedy, the fifth is a lively but improbable farce. Moliere would have given less power to the critic, had he introduced any other person than the son of the grand Turk.

Turk. But he endeavoured rather to make a diverting than a perfect and regular work.

Lully composed the music likewise to the ballet in this piece, and played in it as in Pourceaugnac.

LES FOURBERIES DE SCAPIN.

A comedy of three acts, in prose, represented the 24th of May, 1671, at the theatre du Palais Royal.

The Cheats of Scapin is one of those farces that Moliere wrote while travelling the country. He made no scruple to insert two entire scenes in it from the *Pedant Joué*, a good-for-nothing piece of Cirano de Bergerac's. It is said that when he was reproached for this plagiarism, he replied, these two scenes are good, and belong to me, and I have a right to lay claim to my own wherever I find it.

Had Moliere given the world this farce for a comedy, Boileau would have had reason to have said in his art of poetry,

C'est par là que Moliere illustrant ses écrits,
Peut-être de son art eût remporté le prix,
Si moins ami du peuple en ses doctes peintures,
Il n'eut point fait souvent grimacer ses figures,
Quitté pour le buffon l'agréable & le fin,
Et sans honte à Terence allié Tabarin.
Dans ce sac ridicule où Scapin s'enveloppe,
Je ne reconnais plus l'auteur du Misanthrope.

So had Moliere obtain'd a just renown,
From all competitors had borne the crown;
If less desirous of the people's praise,
Grimace and farce had ne'er disgrac'd his plays;
Had Mr. Merryman ne'er seiz'd the throne,
Where Terence sat, and should have reign'd alone.
Thus while the tricks of Scapin are the plot,
The author of the Misanthrope is quite forgot.

But

But we may answer this great critic, by telling him, that Moliere never did suffer Mr. Merryman to usurp the throne of Terence in his true comedies, we may say that in these he has surpassed Terence; that though he has sacrificed to the taste of the people, it has only been in his farces, in which the very titles sufficiently indicate their tendency to low comedy, and that this low comedy was necessary for the maintenance of his company.

Moliere never supposed that *Les Fouteries de Scapin*, or *Le Mariage Forcé*, had equal merit with *L'Avare*, *Le Tartuffe*, *Le Misanthrope*, *Les Femmes Savantes*, or that they were of the same species. Which way can Boileau say, that Moliere *might* have borne away the crown from his competitors? If Moliere does not, who shall wear the crown?

P S I C H E.

A ballet tragedy of five acts, in verse, represented before the king, in the hall of the machinery, at the palace of the Tuilleries, during the carnival in January 1670, and in public at the Theatre du Palais Royal, in 1671.

The spectacle of the opera, known in France under the administration of cardinal Mazarin, died with him. It began at this time to rise again. Perrin, who introduced the ambassadors at the house of Monsieur, brother to Louis XIV. Cambert, master of the band to the queen-mother, and the marquis de Sourdiac, a man of taste, with a genius for machinery, obtained in 1669, the king's privilege for the opera, but they gave none in public till 1671. They could not believe that the French would endure to hear music for three entire hours, or that a singing tragedy could succeed. It was supposed that a tragedy declaimed with songs and dances between the acts, was the summit of perfection. No body supposed, if a tragedy was beautiful and interesting, that it occasioned the music between the acts to appear heavy, neither when the interludes were brilliant, did they perceive that the ear would receive any disgust

in

in suddenly returning from the charms of music to the simplicity of declamation. A ballet may relieve the spectator between the acts of a dull piece, but a good one needs no such assistance. *Athalie* is performed without chorusses and without music. It was some years after this, that Lulli and Quinault taught us that we were able to sing a tragedy as well in France as they could in Italy; and moreover, that we could render it interesting, a perfection that Italy never knew.

Hitherto, they had never had any pieces consisting of music and machinery, such as *Andromède* and *La Toison d'Or*, since the death of cardinal Mazarin. In the winter of 1670, the project was conceived of giving an entertainment of this kind, with the addition of dances, to the king and the court. Moliere had the conduct of the fable committed to him; it was one of the most gallant and ingenious possible, and at that time greatly in vogue on account of a tedious romance that La Fontaine had given the world in 1669.

He had time only to write the first act, the first scene of the second, and the first of the third, as it was to be finished in a very short space. Peter Corneille undertook to finish the piece, he willingly subjected himself to the plan of another, and this masculine genius rendered dry and severe by age, became gentle and soft to contribute to the pleasures of Louis XIV. The author of *Cinna*, at the age of 67, wrote the declaration of *Pfiche to Love*, which still passes for one of the most delicate and natural passages on the theatre.

All the words of the airs were wrote by Quinault: Lully composed the music. Racine only was wanting to this society of great men, to have united whatever was most excellent on the theatre, in the service of a king, who merited to be served by such men.

Pfiche is not a piece of great excellence, and the last acts are exceedingly feeble; but the beauty of the subject, the ornaments with which it was embellished, and the royal expences of this spectacle may plead for its defects.

LES FEMMES SAVANTES.

A comedy of five acts, in verse, performed at the theatre du Palais Royal, the 11th of March, 1672.

This comedy, which by the connoisseurs is exalted to the same rank as the *Tartuffe* and the *Misanthrope*, attacks a species of ridicule which does not appear proper to give pleasure either to the citizen or the courtier, to whom it seems equally a stranger. It was therefore at first received but coldly, but the connoisseurs presently rendered Moliere the suffrages of the city, and one word from the king gave him those of the court. The plot, which in the effect had something more diverting than that of the *Misanthrope*, sustained the piece a long time.

The more one considers, the more one admires how Moliere could throw such a vein of pleasantry into a subject which seems so much better calculated to produce a pedant than a humorist. Those who are acquainted with the literary history of these times, know that *Menage* is exhibited in this comedy by the name of *Vadius*, and that *Trissotin* is the famous abbé Cottin, so well known in the satires of Boileau. Unhappily for them, these two men were the enemies of Moliere; they endeavoured to persuade the duke de Montausier, that the *Misanthrope* was a satire upon him. Some time after, they had the scene which Moliere has so happily painted in the *Femmes Savantes* with mademoiselle, daughter of Gaston de France. The unfortunate Cottin wrote equally against *Menage*, against Moliere, and against Boileau. The satires of Boileau had already covered him with shame, but Moliere overwhelmed him. *Trissotin* at first was called *Tricottin*. The actor who performed the part, made every effort to resemble the original in voice and action, and to make the ridicule still stronger, the verses of *Trissotin* burlesqued upon the stage to excite the laughter of the public, were the verses of the abbé Cottin himself. If they had been good, and if the author had been a man of genius,

genius, the murderous criticism of Moliere and Boileau would not have taken away his reputation. Moliere himself had been as cruelly exhibited upon the theatre de L'Hotel de Bourgogne, but was not the less esteemed. Merit is a certain shield against satire. Cottin had not abilities to sustain such powerful attacks. It is said he was so overcome by this last stroke, that he fell into a deep melancholy, which conducted him to the grave. The satires of Boileau likewise were the death of the abbé Caffaigne. Miserable effect of a liberty more dangerous than useful, and which is more calculated to flatter human malignity, than to inspire good taste.

The best possible way of satirizing bad poets, is to produce excellent works: Moliere and Boileau stood not in need of reproaches.

LES AMANS MAGNIFIQUES.

A ballet comedy of five acts, in prose, represented before the king at St. Germain's, in the month of February 1670.

Louis XIV. himself gave the subject of this piece to Moliere. He had a desire to see two princes disputing for one mistress, and giving gallant and magnificent entertainments. Moliere served the king with precipitation. He introduced two characters that had never appeared on his theatre before, an *ASTROLOGER* and a *FOOL*. The world was not then freed from the superstitious absurdity of judicial astrology. The less they knew of the true astronomy, the more they were addicted to the false. It is related in Vittorio Siri, that at the birth of Louis XIV. an astrologer was kept in waiting in a closet adjoining to the room where the queen was brought to bed. It was in courts that this superstition was most prevalent, because there they suffered the greatest anxiety concerning the future.

Fools likewise were the most in fashion. Each prince and each great lord had his fool. Men have only quitted these remains of barbarism, in proportion as they have tasted the pleasures of society and the fine arts. The
fool

fool which Moliere has drawn, is not a ridiculous fool, such as Moron in the *Princesse d'Elide*; but a subtle fellow who being allowed to say any thing, avails himself of that liberty with great art and address. The music is by Lully. This piece was only played at court, and would have had but little success there, but for the merit of decorations, and its being adapted to time and circumstances.

We must not omit that in the interludes of the *Amans Magnifiques*, we find a translation of the ode of Horace, beginning—*Donec gratus eram tibi*.

LA COMTESSE D'ESCARBAGNAS.

A comedy of one act, in prose, represented before the king at St. Germain's, in the month of February 1672, and at Paris, upon the theatre du Palais Royal, the 8th of July, the same year.

This is a farce, but the characters which are all provincial, have a simplicity which is perhaps too much so. The absurdities of the provinces are corrected in proportion as the taste for society, and the easy politeness predominant in France expanded.

LE MALADE IMAGINAIRE.

In three acts, with interludes, was performed at the theatre du Palais Royal, the 10th of February, 1673.

This is one of the farces of Moliere, in which we find many scenes worthy of comedy; simplicity, which is perhaps carried a little too far, is its principal characteristic. His farces have the defect of being sometimes a little too low, and his comedies of not being always sufficiently interesting. But with all these defects, he will for ever continue the first of comic poets. Since the days of Moliere, the French theatre has been supported by, and subjected to laws far more decent and severe than when he wrote. No one would risk a scene, such as where Tartuffe endeavours to debauch the wife of his host. No one would dare to make use of the terms, son
of

of a whore, dirty slut, or cuckold. The most exact good manners reigns in the modern pieces. It is strange that such a deal of regularity has not yet erased the blemish which an unjust prejudice has affixed to the profession of a comedian. They were honoured at Athens, where they performed works less valuable. It is cruelty in the extreme to debase men so necessary to a well polished state, and who exercise under the eye of the magistrate, a talent so difficult and so estimable. But this is the fate of all those who have genius only for their support, and who labour for the benefit of an ungrateful public.

It is demanded why, since the reputation of Moliere is equal to that of Racine, the theatre is deserted when they perform his comedies, and why hardly any body at present goes to see this same Tartuffe, that once so powerfully attracted all Paris, though they still eagerly run to the tragedies of Racine whenever they are well represented. It is because the picture of our passions touches us more immediately than the portrait of our follies. It is because the mind is soon weary of wit, but the heart is inexhaustible. The ear is more delighted with the harmony of fine tragic verse, and the astonishing magic of the stile of Racine, than it can possibly be with the language proper to comedy. The latter may be pleasant, but it cannot be affecting, and we go to the theatre to have our affections roused.

It must be confessed likewise, that Moliere, admirable as he was in his way, had neither plots sufficiently attractive, nor denouements sufficiently happy. Such, and so great is the difficulty of the dramatic art.

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